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ORIGINAL ARTICLES.

ASEPSIS VERSUS ANTISEPTICS IN OBSTETRICS AS A PREVENTIVE OF PUERPERAL SEPTICÆMIA.

Read in the Section of Obstetrics and Diseases of Women at the Forty-first Annual Meeting of the American Medical Association, Nashville, Tenn., May, 1890.

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The history of medicine suggests to the mind a history of theories, hypotheses and dogmas, from the time of the founding of the School at Alexandria under the guidance of Erasistratus and Herophilus, two of the principal professors. This was 300 years before Christ.

The profession then became divided into two sects, known as the dogmatists and the empirics. The former, sometimes styled the rationalists, contended that before prescribing for the sick we should endeavor to learn the nature of the disease by ascertaining its cause; whilst the empirics "contended that this knowledge was impossible to be obtained, and if possible not necessary," and that experience should be our sole guide, and if we should step beyond that "we are liable to commit dangerous and often fatal errors."

This division of the profession continued several centuries—"all physicians being included in one or the other of these rival sects;" the two schools being about equal as to numbers.

About the commencement of the Christian era a new sect was founded by Themison, of Laodicia. This sect was termed the methodics, who seemed to have occupied middle ground between the dogmatists and the empirics. The methodics became to be the fashionable or most prominent sect, which position it held for the first two centuries of our era. About this time they broke up, when the two sects, pneumatics and eclectics followed.

During the first few centuries of the Christian era several able medical authors arose, among them the celebrated Galen, whose opinions remained unchallenged till the sixteenth century, when his works were publicly burned by that insane quack, Paracelsus. In the fifteenth century the sect called the "chemical physicians arose, who claimed that all the phenomena of the living body could be explained by the chemical laws as those which rule inorganic matter." Paracelsus belonged to this sect.

In the seventeenth century another chemical sect was instituted, which differed from the former in that they believed all diseases were due to humors causing fermentation in the blood—"that certain humors are naturally acid and others alkaline, and that if one or the other of these predominated, certain specific diseases were the result." This sect was termed the humoral pathologists.

This dogma, however, was soon succeeded by the mathematical or iatro-mathematical school. "As this school gained ground, that of the chemists declined." Another rival sect at this time made its appearance under the title of vitalists, which originated with Van Helmont. Sydenham rather leaned towards the chemists, but "did not allow his speculative views to interfere with his treatment."

Haller, an eminent pupil of the great Boerhaave and the father of modern physiology, had some prominent opponents to his theory of irritability and sensibility. Cullen, who, in the last century, did a great deal to establish medicine on a firm and reliable basis, had, as he said, to contend with many baseless theories as well as false facts. His contemporary, Dr. John Brown, was the father of the so-called Brunonian theory, which spread to a considerable extent over Europe, and especially in Italy. It, however, did not seem to take to any great extent in this country. His doctrine was, that all diseases were divided into two classes, the sthenic and asthenic, and were to be treated accordingly—the former by sedatives and the latter by stimulants.

About the time the Brunonian theory expired, Hahnemann published his work entitled "Organon of Medicine," by which disease was to be treated by similars, infinitesimally administered.

Since that time many pathies and isms, *id genus omne*, have made their appearance and had their advocates. Medicine, like all other sciences, has made progress by coming in contact with antagonistic forces, and we may truly say that if any science ever had to make headway against a multiplicity of adverse forces it has been medicine. It has been, and you might say, is still, a kind of shuttlecock, against which every one so inclined

may play battledoor, and notwithstanding the players are usually defeated, they generally leave something good behind. And to make the rule good we can make one exception, to wit: that wild quack Paracelsus; and even he, with all his fanatical absurdities, in conjunction with his chemical followers, evolved some metallic remedies. One reason why medicine has had so many adverse dogmas to combat, is the frequent introduction of extreme ideas without a basis of common sense, and which seemed so absurd to the minds of thinking men that new theories were instituted in order to combat these extremes. Many sects, doubtless, have originated from this cause. No doubt the extreme dosage and profuse blood-letting period induced Hahnemann to improvise his system of small dosage. The same might be said in regard to the introduction of Thompsonianism in this country. So many patients were deformed and destroyed by salivation and blood-letting, it was thought that the herb plan in connection with steam, might not be so dangerous to life. Then it will be seen that it is not well to allow the pendulum of medicine to swing too far either one way or the other.

The science of medicine was at a stand-still in Europe for more than half a score of centuries after the death of Galen. During that time, however, some advances were being made in Arabia by the great Avicenna and others. This might be termed the inactive, or dark age of medicine, the practice being merely a routine by the Galenists.

These remarks were suggested and regarded as being *apropos* to what I have to say in regard to the present controversy respecting the use of antiseptics in obstetrics as a prophylaxis to puerperal fever.

The various uses of so-called antiseptics are based on the hypothesis that the atmosphere is a great sea filled with pathogenic germs; and that by the use of these agents we are enabled to prevent their contact with wounded or raw surfaces, or to destroy them should they so come in contact.

My object in writing this paper is to inquire whether the great benefit claimed be due to their use, or to other means instituted at the same time?

At the time Prof. Lister commenced the use of his antiseptic dressings, he also instituted a method of absolute cleanliness in his surgical wards, hitherto unpracticed and even unknown.

The means of cleanliness he employed no doubt were the main factors to which was due his great success over former methods of managing surgical cases; and doubtless his death-rate would have been but little greater had he used a diminished paraphernalia in dressing. This fact has since been demonstrated in Bartholomew Hospital by Mr. Savary.

The same may be said as it respects gynecological surgery. This fact is made palpable by the great and unprecedented success of Mr. Tait, Dr. Bantock and others. Mr. Keith, following the directions of Prof. Lister in the use of the spray, lost several patients by its use, when he abandoned it, and now employs simply aseptic means. This much by way of prelude to the subject under consideration.

It is well known that, before Listerism or antiseptics were introduced into surgery, the lying-in hospitals of Europe were mere death-traps to lying-in women—ranging in mortality from 5 to 19 per cent., and this mainly due to puerperal septicæmia. During seasons of epidemics it greatly exceeded this rate. At these times, in some hospitals, nearly every woman died.

In 1866, Lefort's investigations show that the average mortality in lying-in hospitals was one in twenty-nine, and in cities one in 212 cases, showing very plainly that the cause of the disease existed within the walls of the institutions.

As soon as a method of cleanliness and proper ventilation was instituted in these hospitals, a great change took place for the better. These happy results, however, were mainly attributed to antiseptics rather than asepsis. This plan consisted, mainly, in the use of vaginal injections of carbolic acid, both during labor and after. These injections were kept up for ten days or two weeks, and some went so far as even to inject the womb, once or twice a day. The general strength of these injections was 1 to 40, or about 2.5 per cent.

To be sure, there were many other things used as preventive means, such as clean hands on the part of both physicians and nurses. Everything about the patient and the room must be scrupulously clean. She must take a bath and be sponged off well with a bichloride solution, 1–1,000, and the vulva and pubes thoroughly disinfected. Even the walls, floor and furniture of the room must be scrubbed and washed with bichloride solution.[1]

These injections were used in order to destroy any germs that might be present in the vagina, as well as to prevent their introduction.

Now, for a moment, let us see what effect the carbolic solution injections into the vagina during labor will produce. In the first place, the mucus of the parts, which is the natural lubricant of the canal to promote the passage of the head, is washed out; the surface of the organ being to some extent rendered dry by the irritating action of the drug; besides it must, in some degree, worry the patient, at a time when her mind is greatly distressed. These effects would naturally tend to protract the labor.

One would, on reflection, suppose but little good would result from the use of vaginal injections after labor, as far as the removal or destruction of germs that might be present in the organ is concerned. The lining membrane is now in

[1] See Gaillard Thomas' Address, N. Y. Medical Journal, December, 1883.

folds, and should there be any germs hid away in these folds or rugæ, they would not be molested by the small stream of fluid passed by a Davidson or Higginson syringe. Then this operation is to be repeated several times in the twenty-four hours, at a time when the patient needs rest and should be disturbed as little as possible, to say nothing of the danger that might result from the frequent application of the solution. Then again, the frequent introduction of the nozzle of the syringe into a lacerated canal would greatly tend to prevent healing, to say nothing of the danger of the introduction of septic matter by the finger of the nurse, or germs from the atmosphere. The general directions in regard to the cleanliness of the patient and her surroundings are most admirable.

Dr. Garrigues,[2] of New York Maternity Hospital, introduced a different plan of antisepsis from that by injections. He uses what he terms a bichloride pad to the vulva. This is confined to the parts by being fastened back and front to a binder. The pad is renewed three times a day.

According to Dr. Gaillard Thomas there might result danger from confining the lochial discharge in contact with the lacerated or wounded surfaces. He says:[3] "In every case of child bearing the cervix, vaginal mucous membrane, perineum and vulva are in varying degrees lacerated; and in every case the offensive fluid, called lochia, poisons these freshly made, unprotected wounds." But doctors will disagree. Dr. T., instead of confining the lochia in the vaginal canal, washes it out with carbolic solution. Although Dr. Garrigues claims better success with the use of his pad as a prophylactic against septicæmia than had by injections, yet it would seem still safer, in order to guard against the contingencies alluded to by Dr. Thomas, to introduce a drainage tube through the pad to allow the escape of the lochia as it comes down from the womb.

Dr. G. uses a very strong solution of the bichloride, 1–2000, both to saturate his pad and to inject into the womb after a labor requiring the introduction of the hand or instrument; also in washing out the womb in the treatment of puerperal fever.

Dr. Baruch,[4] of New York, in 1884, made a tabular statement from the report of various lying-in hospitals of Europe, comparing the results of those using carbolic acid injections prophylactically, with those where it was not used. The table stood as follows:

HOSPITALS IN WHICH INJECTIONS WERE PRACTICED.

	Mortality per cent.
Charitie (Hartman)	2.5
Charitie, '79 to '81 (Gusserow)	1.5
Charitie, '82, Gusserow and Somerbrodt	1.6
Maternity at Parma	3.42
Glasgow Maternity (New building)	1.56

HOSPITALS IN WHICH INJECTIONS WERE NOT USED.

	Mortality per cent.
Pavillion (Tarnier to June '83)	.00
Prague Maternity (Breisky and Weber, '80)	.46
Prague Maternity (Breisky and Weber, '80)	.56
Breisky and Fischel, '81	.21
Breisky's ward, '82	.00
Copenhagen maternity, '80	.26
Copenhagen maternity, '81	.50
Prague, 1,100 cases, '83	.00
New York Maternity, 3d series, Dr. Garrigues	.00

It will be seen, then, from this table that the advantage is greatly in favor of those institutions where prophylactic injections were not used. Then on what grounds can we attribute the great change effected in the prevention of puerperal sepsis within the last decade if not to cleanliness, together with better ventilation and less crowding? The answer will be made more palpable when we come to examine the germicidal properties of some of the agents used as antiseptics. The difference of success between those who use and those who do not use injections, the sanitary environments being the same, must be attributed to the irritating or poisonous effects of the drugs used. Then why not put into practical use the discovery made by Pasteur more than a score of years ago, to-wit: that atmospheric air could be rendered entirely aseptic by filtering through cotton cloth? This being true the Lister dressing to wounds could be greatly modified as well as simplified. He has already dispensed with a part of his original dressing, and changed some of the antiseptic agents. He dispensed with the spray some time ago, and I am informed by a friend, who paid him a visit last year, that he has also laid aside the protective and the Mackintosh parts of his dressing. He has also lately changed the use of the bichloride of mercury for that of the double cyanide of mercury and zinc; and I predict that if he lives another decade he will have dispensed with all dressing saturated with irritating so-called antiseptics, and acting on Pasteur's discovery, apply simply clean cloths and bandages. I make this prediction on the hypothesis, that as an acute observer he will readily detect any imperfection or ill effect in his dressing and change accordingly; or, in the words of Gaillard Thomas, "let the errors of to-day be corrected by the wisdom of to-morrow." No one should be wedded to a principle so closely as to dogmatically adhere to it when he perceives it is wrong, and so far Lister has escaped this charge.

He is still experimenting in order to develop the best. As soon as he discovered the spray to be irritating and useless he discarded it, and so in other things. I have thought it strange he did not discard the protective long since, as I could not see what efficacy it possessed, but rather harm, as it was applied immediately over the orifices of the drainage tubes and must have

[2] N. Y. Med. Journal, March 1, 1884.
[3] See N. Y. Journal, December 15, 1883.
[4] New York Medical Journal, March 22, 1884.

prevented the escape of the discharge from the wound. And as to the Mackintosh, although it was applied to prevent the possibility of entrance of microbes to the wound, that end was already secured by the abundance of the different kinds of gauze dressings.

To show how we may be mistaken in our views of new and not thoroughly tried plans of treatment, we only have to refer to the able address of Mr. MacCormac in 1879, before a branch of the British Medical Association, in London. He, as well as Sir Joseph Lister, Watson Cheyne and others, urged the great importance of observing all the minutiæ and detail of the Lister plan, and if this was not strictly adhered to, failure was apt to result. Great stress was laid on the beneficial effects of the spray—in fact more importance was attached to the use of that than any other element of the dressing. This was particularly pointed out as the means *par excellence*, to be used in the safe management of ovariotomy, or any case where laparotomy has to be performed. But, not long after this, as before referred to, the acute observation of Dr. Keith confirmed him that he was poisoning and destroying his patients by its use. Professor L. soon followed Dr. Keith in dispensing with its use on account of its irritating effects. I presume it is not now used by any surgeon. In discussing Mr. MacCormac's address, Sir Joseph was generally accorded due credit for having introduced a new principle in the management of wounds, and a majority agreed with him that true antiseptic treatment consisted in the close observance of all the details of the method, without which success would not be assured. Sir James Paget, although awarding great credit to Sir Joseph, pointed out the fact, that great improvement in the sanitary condition of the British hospitals had already commenced, and that in his opinion cleanliness was the true secret of success.

In order to illustrate the danger of such dogmatic assertions as that the Lister plan of managing wounds, or that injections of antiseptics in obstetrics were infallible as preventives to septicemia, and if failure occurred when any of these details were omitted, the attending surgeon or physician was responsible, any one in the profession was liable to be mulcted into heavy damages in case of malpractice suit. Since the discussion of that address many changes have taken place in the minds of men, and we can now begin to see that the medical pendulum was allowed to swing too far to the left. And now a malpractice suit would be as liable for commission as it would then have been for omission.

It would seem from the present status of opinion that a majority of prominent obstetricians regard the cause of puerperal septicæmia to be heterogenous and of course preventable.

This septic ferment, they say, may be communicated by the hands or clothing of the physician or nurse, and may consist of septic matter from a patient affected with the disease, from an unhealthy sore or ulcer, erysipelas, measles or scarlatina, and matter from a cadaver. Now to the view of an old-time observer it seems strange that so many different causes may, or can, produce a disease varying so greatly in its characteristics from those whose specific causes develop results peculiar to those causes, and are usually regarded as *sui generis* in character. Were I to carry the microbe of erysipelas to a puerperal patient, and evil results followed, I would expect to see erysipelas in some form. If measles, then in case the patient was not protected, I would look for the development of that disease; also the same as it respects scarlatina. And I cannot see how the causes of these diseases can deleteriously affect the patient if she is protected by having previously had the diseases.

I am now aware that an attack of erysipelas at the time of accouchment greatly endangers the life of the patient, like probably most any other inflammatory disease. But admit the possibility of the causes of these diseases affecting the patient deleteriously, could we prevent it by douching the vagina, as the cause does not gain entrance into the system through that channel?

We have never heard of the causes of these diseases proving deleterious to any other character of patients, no difference what might be the character of the disease with which they were affected, provided they were protected by a previous attack. Of course I alluded to the communication through clothing. We all know that a hospital ward may become so infected with the cause of erysipelas as to render it dangerous to perform a surgical operation. In fact, I have known on one or more occasions the epidemic influence to be so great, even in the country, the same thing happened. The last epidemic of this kind was in 1862–1863, during the winter months, when we could not vaccinate a person with safety, and although there was a case of small-pox in the neighborhood, we had to cease vaccination. Does not puerperal fever at times prevail epidemically without our knowledge being capable to comprehend its cause? This occurs also as it regards scarlatina and other diseases. You cannot prevent the occurrence of scarlatina by isolation of the children when the disease is of epidemic form, no more than you can influenza. There will always be some things that we are unable to account for in our philosophy, and I think epidemic influence is one of them.

I regard it as a dangerous doctrine to proclaim that puerperal fever is entirely due to heterogenous septic matter, and is a preventable disease. I think with our eminent accoucheur Fordyce Barker and others that we may, and occasionally do, have the *old* form of the disease, to wit: in-

flammation of the womb and adjacent structures. I will agree that a great deal can be done, and has been done in lying-in Institutions by sanitary means, to prevent the disease, and have thought strange that such death-holes were allowed to remain uncleaned to within the last score of years. I have also been unable to account for the fact that patients were allowed to be placed in such Institutions, when it was so well known to the managers the great dangers attendant on such admissions; especially when they knew, at the same time, that no such dangerous influences existed outside. All the cases of puerperal fever that have occurred in my practice—some four in number—have been isolated ones, when no other cases existed in the country, and when I was attending no cases of contagious or septic disease. To be sure I have had, like most other accoucheurs, cases of what are ordinarily known or termed milk fever, the patient having chilly sensations, followed by reactive fever, which would last twenty-four to thirty-six hours. Then again I have had one or more cases where fever resulted from lacerated cervix, lasting from three to five days. But fortunately I have never seen an epidemic of the disease, although I have been practicing medicine, mainly in the country, forty-five years. Aside from the cases above alluded to I have been called to see a few in consultation, one of which was a case of septicæmia resulting from a dead embryo of about three or four months.[5] The patient complained of chilly sensations on Friday—so much so as to induce her to think she had the chills, and caused her to take quinine. She was not aware of the fact that she was pregnant, then nursing a baby 8 months old. These chilly feelings continued, and on Sunday she had labor pains, which that evening expelled the fœtus, leaving the secundines behind. The attending physician did not deem it essential to empty the womb and waited the expulsion of its contents. This state of things continued until I saw her on the following Wednesday noon, when the lochial discharge was very offensive and her temperature high, alternating with rigors.

I immediately emptied the womb and washed it out thoroughly with carbolic solution, 1 per cent. This was repeated again that evening, after which the discharge was devoid of unpleasant odor. The placenta was entirely putrid.

Now here was a case of septicæmia coming on before even the membranes were ruptured; at least there had been no pain or discharge until two days after the rigors and fever set up. The question now is, how did the cause enter from without? We may entertain very plausible theories in regard to disease, but every now and then we meet with a case that we are unable to account for on our preconceived hypothesis. I think, in this particular, respecting the cause of puerperal fever, the pendulum is being allowed to swing too far to the left. Then again, I think too many great men entertain too great a dread of pathogenic germs in the atmosphere. I never could believe that the atmosphere of ordinary sanitary localities was permeated with disease producing germs. Were this so, the life of man would be much shorter than it is; in fact, the world would be in danger of being soon depopulated; especially would this be the case, if, as it is claimed, they multiply so rapidly. Neither do I believe, as some maintain, that all diseases are due to specific germs. If this theory was true there would be but few people well at any one time, as it is contended that in a case of sickness is the time when the germs increase so rapidly, and of course would make it dangerous for both nurses and physicians to render attention. As far as this theory is concerned it might be said that history is repeating itself, as this doctrine was promulgated by the humoral pathologists in the 17th century. They contended that all diseases were due to a species of fermentation in the blood.

In order to illustrate the fact that all bad effects are not due to germs in the atmosphere in treating wounds, I will mention the results of open stump dressings in the surgical wards of Belleview Hospital by Dr. Dennis in 1876, while interne in the service of Dr. James R. Wood.

The mortality at that time in that Institution was 35 per cent. of the surgical operations, and rarely a case escaped abscess pyæmia or erysipelas. He reported fourteen successive cases of amputation treated with open wounds, simply placing over the stump a thin cloth moistened with a weak solution of carbolic acid. They all recovered without symptoms of pyæmia, and with but little rise of temperature. This was done without the use of spray, and simply with the dressing alluded to.

In the opinion of Dr. D., the difference in favor of the open wound dressing over that of closure and bandaging was due to better drainage; that the old method confined the discharge within the wound, producing high temperature, pyæmia, etc.

Prof. Link, of Indianapolis, also has reported greater success in the treatment of amputations with open stumps, over that of the closed dressing.

Now we will for a moment inquire into the germicidal properties of some of the most prominent of the so-called antiseptics.

At the head of these stand the bichloride of mercury which is the germicide *par excellence* above all others; but at the same time, perhaps, the most dangerous. It destroys all bacterial life promptly, but when uncautiously used on large raw surfaces may result disastrously to the patient, by absorption.

Yet, can this active and destructive germicide be

[5] See Practitioner and News, April 26, 1890.

strictly an antiseptic where it may, and frequently does produce, perhaps, the worst state of sepsis of any known drug or substance aside from its chemical congenors? This is a question I have frequently thought of in connection with it as an antiseptic, and could but think it somewhat paradoxical. In coming in contact with blood or serum the albuminate of mercury is formed and its virtue as a germicide is destroyed.

Next, the corrosive chloride in general use, has been carbolic acid. But it has been, within a few years, found to be an uncertain germicide, as well as a dangerous poison—especially is this the case when applied sufficiently concentrated to destroy microbes. Dr. Marcy says, 1–40 generally fails to destroy bacteria, and 1–20 should be in contact several minutes to be effective, which could not be done with safety to a raw surface. Dr. Sternberg says, a 5 per cent. solution failed to destroy the micrococcus from pus; and remarks that as a disinfectant it must be at least 5 per cent. strong, and allowed to be in contact two hours at least. Dr. Koch states "that the surgeon who washes his hands and instruments in a solution of the strength of 1–40, and trusts thereby for the protection of his patients, would certainly endanger them to infection." Of course such strong solutions could not, with safety, be applied to raw surfaces sufficiently long to produce germicidal effects. And lately Prof. Billroth has issued a note of warning against the use of carbolic acid on raw surfaces on account of its poisonous effects, several cases of gangrene from its use having come under his observation. There is but little doubt, that a great number of patients have been destroyed by the improper use of both carbolic acid and corrosive sublimate. In the reports of lying-in hospitals of deaths due to puerperal septicæmia, those occurring from other causes during the puerperal state were not included in the list, and in all probability many died from the excessive use of these irritating substances, during the height of the fashion of injecting the vagina and womb as a prophylactic measure to septicæmia. Many cases in private practice have been reported, and it is very likely that many more were left unreported. Such dangerous remedies, as much as possible, should be withheld from the hands of the ignorant. Of all the so-called germicides, these two have been the most used, and that of carbolic acid the longest.

Next to these in the list, perhaps, oil of eucalyptus, iodoform and boracic acid have been mostly relied on, neither of which, according to late observations, have much, if any, germicidal virtue. Iodoform, which is regarded as being third in the list as to its germicidal properties, has been found, in that particular, to be practically inert, the bacteria growing in it as a culture bed. Turpentine, balsam of Peru, thymol, naphthalin, chloride of zinc, alcohol, etc., possess slight germicidal properties in concentrated solutions. Iodoform, with many other things in the long list, have been relied on as germicides, and the successful results placed to their credit. This is another reason why I think our fears have been unnecessarily excited as to the great number, and danger of germs in the atmosphere. If we fight an invisible foe with harmless weapons and come out conqueror, it should excite some doubt in our minds, either as to the virtue of our arms or the presence of the adversary. But notwithstanding the want of germicidal virtues in many agents that have been, and are still being used as germicides, I do not wish to be understood that I regard them as useless as remedial agents. On the other hand, I regard many of them as being, in the proper strength, as among our best remedies, both internal and external. Time will not permit me to go into detail as to their remedial virtues, but I regard them in the light of alteratives rather than that of germicides. In fact a number of them are so useful in this particular we are unable to dispense with them in practice. Among the germicides in recent use is creolin, which has been greatly lauded for its virtues in this regard, but it is learned that its virtue in the strength prescribed is virtually inert. It is said to promote suppuration.

My object in writing this paper is to caution the medical brethren against extreme assertions as to the success of any special plan of treatment, and making it incumbent upon all to closely follow in minutia and detail such theories and plans until they have been thoroughly tested and found, without doubt, that success necessarily and essentially depends upon such close adherence; and thus avoid liability to malpractice suits by those failing to be fashionable. I am finding no fault with Mr. Lister and his early followers for instituting and practicing a new principle in surgery as it respects hospital practice, but only in being so dogmatic in their assertions that success entirely depended on closely observing every detail in his method. This should not have been proclaimed until it was thoroughly proved to be so. As before remarked, a short time only was required to prove the erroneousness of the assertion. But in the meantime, many able men who could not see the necessity of such armamentarium in surgical practice, to say nothing of its expense and inconvenience, had they failed in any case, would have been held responsible for such failure.

Simply because it has been learned that this great success was due to simple cleanliness rather than to the germicidal and antiseptic virtues of the agents used in dressing wounds, the fame which attaches to the name of Lister should not be in the least dimished. But for his introduction into practice of a new principle, the inauguration of

asepsis in treating wounds, as well as diseases, would have, no doubt, been somewhat deferred. His success over the old time practice induced men of brains to commence thinking, which is the only way great reformations can be brought about. But unfortunately great discoveries are, in their application, many times carried to excess, which, doubtless was the case with the Lister antiseptics, as it respects their use in obstetrics. The conservative views entertained heretofore as it regards parturition were soon exchanged by many for those of a radical character. Instead of regarding parturition as a natural and physiological process, it was deemed to be pathological, and the puerperi was looked upon in the same light as a case of amputation, and of course must be treated accordingly. This view led to the use of injections of irritating and poisonous drugs to prevent septicæmia.

I only wish to put in a plea of conservatism, by which the medical pendulum will be prevented from swinging too far to one side.

GUNSHOT WOUNDS OF THE ABDOMEN; WITH CASES.

Read in the Section of Surgery and Anatomy at the Forty-first Annual Meeting of the American Medical Association, Nashville, Tenn., May, 1890.

BY DAVID BARROW, M.D.,
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J. G., æt. 15, was shot in the abdomen at 7 p. m. on February 8, 1890. The wound was one inch and a half to the left of and on line with the umbilicus, and was made by a 32-calibre ball. The pistol was discharged at close range. I saw him at ten P.M. He was then in bed with the lower extremities flexed; vomiting was frequent, and he complained of great abdominal pain; the facial expression was anxious, and the abdomen was hard and retracted; pulse was over a hundred and rather weak; shock was evident but not extreme. The wound was not probed, but it was plain that the cavity had been entered and all the symptoms pointed to visceral wounds. Laparotomy was indicated, and at eleven o'clock, by lamp light, I operated, assisted by Drs. Bryan, Keller and Scott. Chloroform was administered and several times during the operation the patient's condition was alarming. An incision of four inches was made in the linea alba, between the umbilicus and pubis. A loop of the intestine presented, but owing to the extreme rigidity and retraction of the abdominal walls, manipulations were unsatisfactory, so I enlarged the incision to six inches. Passing two fingers into the cavity the wound of entrance was felt; the ball had passed backward and upward. Tracing the intestines I found six perforations, four in the small and two in the large bowel. These were closed by the Czerny-Lembert suture, using fine intestinal silk, and in one of the perforations of the large bowel, on account of the great bruising and ecchimosis, I reinforced the stitches and bruised tissue with omentum. There was not much hæmorrhage and no feces were seen. Irrigation was copious and thorough, and considerable water was left in the cavity. A glass drainage tube was inserted, with one end between the bladder and rectum; the incision was closed with silk. The duration of the operation was an hour and fifteen minutes. Chloroform was taken badly, and a great part of the time, all intra-peritoneal manipulations were resisted by the forcible contraction of the abdominal muscles, and the operation was thus greatly prolonged. Boiled cistern water was used. Antiseptic dressings were applied, and the patient was greatly shocked when placed in bed; the heart's action was rapid and weak, and the respiration was shallow. Reaction was slow and he vomited occasionally for eight hours. On account of some pain and great restlessness morphine was given in small doses for ten days. The drainage tube was emptied frequently and was removed on the sixth day. Convalescence was uneventful. The bowels were moved on the seventh day, and stitches taken out on the eighth. There were several stitch abscesses and a small superficial part of the incision healed by granulation. Three weeks after the operation, on account of imprudence in diet, he had a severe attack of indigestion, with much vomiting, and was greatly exhausted. He is now perfectly well.

C. D., æt. 13, was wounded by a 32-calibre ball at four P.M., July 1889. I saw him a few minutes later and had him taken to his home several squares away on a stretcher. I operated at 8 P. M., assisted by Drs. Brown, Molloy, Colman and Evans. At the time of operation there was no symptoms indicating serious injury; there had been no vomiting; the pulse was eighty and regular; and the boy was comparatively comfortable. The ball had entered two inches to the right of and one inch below the level of the umbilicus, and a probe passed directly into the peritoneal cavity. Chloroform was administered, and I made a four inch vertical incision, and included in the incision the bullet wound. The ball had passed downward and to the right. Tracing the intestines five perforations were found, two in the ilium and three in the cæcum. These were sutured with fine silk by the Czerny-Lembert method; the cavity was irrigated with boiled distilled water; the abdomen was closed and antiseptic dressings applied. Duration of operation a half hour. There was no shock when put to bed and he rallied promptly from the anæsthesia. For two days he did well when the temperature went up to 101° and he began to vomit. The abdomen was reopened, and irrigated with boiled distilled water and a rubber drainage tube in-

serted. He died at the end of the third day of septic peritonitis. *Post mortem* demonstrated all perforations securely closed; there was no leak when the gut was distended with water; some loops of the intestines were adherent, and there were several ounces of bloody fluid in the peritoneal cavity. The boy should have recovered, and, I believe, would have, had I inserted a glass drainage tube at the time of the operation. The operation was done in a negro's cabin, and the hygienic surroundings were most unfavorable.

In a paper read at the last meeting of the Kentucky State Medical Society on "Four Cases of Gunshot Wound of the Abdomen Treated by Laparotomy, With Remarks," and published in THE JOURNAL, June 15, 1889, I reported all of my cases up to that time. Since then, I have had the two just reported, making six laparotomies I have done for gunshot wounds of the abdomen. Of the first four, three died and one recovered, and of the last two one died and one recovered.

Dr. T. S. K. Morton, of Philadelphia, read in the Surgical Section, at the last meeting of this Association, an instructive paper on "Abdominal Section for Traumatism," and in it gave a complete table, containing nearly all the reported cases of gunshot wounds of the abdomen treated by laparotomy. From a study of this table, and my own cases, I am enabled, I think, to demonstrate much that is still apparently unsettled in the minds of some surgeons relative to the management of these wounds. The table contains one hundred and ten cases, and these should be sufficient to establish many facts in the management of such wounds. That laparotomy should be done when called to one of these patients is no longer debatable, for with the "let alone" plan of treatment nearly all die, and with laparotomy a third recover. This mortality will certainly decrease, and I hope before many meetings of this Association shall have passed by, and when surgeons learn to act promptly, that half or even more of these cases will be saved. The necessity for prompt action is well shown—of the thirty operated upon fifteen, or more, hours after the wounds were received, six recovered and twenty-four died, giving a mortality in these delayed operations of eighty per cent. The great danger is septic peritonitis, and that will often appear very quickly; frequently in a few hours there is evidence of its presence. We should operate to prevent this septic condition that is so certain to follow wounds of the peritoneum, and to procrastinate until this septic inflammation is inaugurated, is a timid and disastrous method of dealing with these wounds, and will necessarily be followed by a very large mortality. Of the seventy-four deaths recorded, thirteen were due to septic peritonitis, directly dependent upon delayed operations. When the operation has been delayed and there is septic infection and shock, the patient can stand but little manipulation, and if the operation be prolonged from any cause, he may die on the table or may never rally from the shock. An ideal operation cannot be done when this is the condition, so we must "operate strictly to save life." No good will be accomplished by closing the wounds neatly, if the patient dies from the prolonged effort necessary. In these desperate cases, I believe more can be saved by opening the abdomen, inserting multiple drainage tubes, irrigating frequently, and adopting the open peritoneal treatment.

In only nine of the cases is the duration of the operation given, and in every instance where it was much prolonged, the patient died. Dogs and other animals will die of shock, if kept under the influence of an anæsthetic for a long time, and the viscera manipulated, and it will be disastrous to anticipate a favorable termination in gunshot wounds, when from two to four hours is often spent in doing the laparotomy. As to the evidence the surgeon should have to justify his opening the abdomen, I think the facts will bear me out in this very positive statement: When there is proof of the ball having entered the peritoneal cavity, it is the duty of the surgeon to open the abdomen and remedy, as best he can, the abnormal conditions there found. Eight times the abdomen was opened and no viscus found wounded. Six of the operations were done promptly and all of the patients recovered; but in two, the operations were delayed, in one to the fourth and in the other to the sixth days, and both resulted fatally. *Post mortem* examinations proved the absence of visceral wounds, and that septic peritonitis had been the cause of the deaths. Had these two patients been operated upon promptly, as were the other six, and the peritoneal cavities thoroughly cleansed, they too, I believe would have been saved. If the six had not been treated promptly, the probabilities are, that some of them would have died of septic peritonitis. Believing, when the bullet has penetrated the peritoneal cavity, that the abdomen must be opened and the cavity cleansed, even should the alimentary canal escape injury, I can see but little use of the hydrogen gas test. There are twenty-one cases where the alimentary canal was not wounded, eleven recovered and ten died. Of course the test would have given negative results, but I venture none of us will doubt but what the operations should have been performed. The test has been applied to nine cases and failed but once to indicate the true condition of the alimentary canal, and then there were five perforations of the small intestines. In another the result was negative, the operation was delayed six days, and then done for septic inflammation, and the *post mortem* examination demonstrated the absence of visceral wounds.

The hydrogen gas test can only be of use to prove the thoroughness of an operation just before closing the abdominal incision. Seven times perforations were overlooked, and had the gas been used, they might have been found and closed. Dr. Senn detected an overlooked perforation with the gas before closing the incision, and succeeded in saving his patient. In wounds of the liver the hæmorrhage must be controlled. Nine of the fifteen cases reported died. To stay the hæmorrhage we may suture the wound, pack it with gauze, or apply the cautery. A glass tube inserted through the track of the ball, as has been suggested, might be of benefit in controlling the hæmorrhage, and by carrying off all septic materials. Styptics might be applied to the bleeding surface through the tube with good results. Of the five kidney wounds all of the patients died except one, and she was saved by removing the wounded kidney.

In abdominal operations there is nothing more essential to success than thorough irrigation, and in laparotomy for gunshot wounds, this is, if possible, more important than in laparotomy for other causes, for here the peritoneal cavity often has thrown into it septic material from the digestive track. It is most difficult indeed to wash the peritoneal cavity clean, and I have no doubt that, in many of the cases where irrigation is noted, the cleaning process was imperfectly done and practically useless. The table can throw no light on this subject, but to every one who has operated in the abdomen, no argument will be necessary to convince him of the importance of thorough irrigation. The best and simplest irrigator I have ever seen is one used by Dr. Joseph Price, of Philadelphia, consisting of a funnel, a rubber tube and a large perforated nozzle. The force of the current can be regulated by elevating or depressing the funnel, and if the nozzle be properly directed amongst the intestines, all loose materials will be floated through the incision. The effect of drainage is forcibly shown, and though out of the one hundred and ten operations, the use or non-use of the drainage tube is mentioned in but twenty-nine, these are sufficient to justify the strongest conclusions. Of the twenty-nine cases drainage was used in twenty-one, and in eight there was no drainage employed; of the drainage cases six recovered and fifteen died, and of the non-drainage cases two recovered and six died, in the former a mortality of 71¾ per cent., and in the latter of 75 per cent. This is a stronger argument than at first appears, for the use of the drainage tube for the cases usually regarded by surgeons as requiring drainage, are the more desperate ones, and those where it is usually dispensed with are considered favorable. So necessary is drainage, that I will, even at the risk of being tedious, refer in detail to some of the cases where drainage was employed and others where it was not. Of the six recoveries where drainage tubes were used, five were desperate cases and could not have been saved without the drains. In one case there was "intense peritonitis" at the time of operation, and the tube was kept in place for ten days; in another the operation was delayed for 108 hours, and besides the perforations, there was in the peritoneal cavity, bloody serum and pus; a third was Dr. M. Price's case, the liver and right kidney were wounded, and the latter organ was removed, and during convalescence several small hepatic abscesses formed and were discharged; and in two of the three remaining cases, the wounds were extensive, and blood, food and feces were found in the peritoneal cavities. In the fifteen fatal drainage cases the conditions were extreme and the drains in none of them could have accomplished much. In two of the cases perforations were overlooked; the operations were delayed in four; and in four others the deaths were due directly to hæmorrhage and shock; in one a divided ureter was undetected; another died from opium; and in one the "drain had not worked." The traumatisms in the other two cases were extensive and it would have been exceptional for either one of them to have recovered. Of the eight non-drainage cases two recovered and six died; of the two recoveries there were no wounds in the alimentary canal in one, and in the other, only one perforation of the small intestine. Of the six that died septic peritonitis caused death in five, and in the other there was profuse hæmorrhage from the renal artery. Had drainage been employed in these cases, I believe more of them would have lived, for if there is any one thing, next to irrigation, that can guard against septic infection, it certainly is the drainage tube.

In one of my patients I believe the omission of the drainage tube was directly responsible for death, and shall always feel that had I used drainage my patient would have recovered. The operation was, with that exception, the most satisfactory I ever did, it was done promptly and quickly; there was no shock before or after the operation; and the perforations were all found and demonstrated at *post mortem* to have been securely closed. Everything went along well until the peritonitis set in, and then death came rapidly, notwithstanding the wound was reopened, the cavity irrigated, and a drainage tube inserted.

In wounds of the intestines so extensive as to materially diminish the bowel lumen, should the Lembert suture be used, intestinal anastomosis promises better results than exsection of the wounded intestine. All of the eleven patients died where exsection was resorted to.

To reinforce a perforated or bruised intestine with omentum is of great importance. Fre-

quently around a perforation there is some bruised tissue, and this may slough if the perforation is simply sutured. In one of my cases I stitched the omentum over the perforation and bruised tissue, and my patient recovered.

The following are the causes of death in the seventy-four fatal cases: Septic peritonitis, 29; hæmorrhage, 15; delayed operations, 13; shock, 9; overlooked perforations, 3; and from other causes, 5. I believe the study of these fatalities, with the other facts presented, will make it apparent that the suggestions made, should be considered as established rules in the management of gunshot wounds of the abdomen. I hope in future that such causes of death will be eliminated as septic peritonitis, due to omissions of irrigation or drainage, delayed operations, shock from prolonged operations, and overlooked perforations.

From a careful analysis of 112 laparotomies for gunshot wounds of the abdomen, I feel warranted in drawing the following conclusions:

First. Gunshot wounds of the abdominal cavity should invariably be treated by laparotomy. With the operation the mortality is 66.27 per cent; without the operation more than ninety per cent. die.

Second. It will be safer to always open promptly and cleanse the peritoneal cavity, even should the viscera escape injury. Two patients died of septic peritonitis, without visceral wound, because this was not done; the six exploratory operations terminated favorably.

Third. Symptoms are unreliable, and the surgeon should never wait for them, if the ball has penetrated the cavity. This must always be ascertained, either by the use of an aseptic probe, or by enlarging the bullet wound and following its track through the abdominal wall. In delayed operations the mortality is eighty per cent.

Fourth. In every instance mentioned, where the operation has been greatly prolonged, the patient died. Shock from the anæsthesia and manipulation is always considerable, and all possible haste should be made.

Fifth. In extreme shock, rather than occupy too much time in suturing the perforations, adopt the open peritoneal treatment, and trust to irrigation and drains to save the patient. Nine deaths were due to shock.

Sixth. In destructive wounds of the intestines, lateral anastomosis promises better results than exsection. All of the eleven died where exsection was done.

Seventh. By utilizing omentum we can sometimes close destructive wounds, without diminishing the intestinal lumen too much, and can reinforce bruised intestinal tissue that would otherwise be dangerous to leave. In one of my successful cases the latter procedure was adopted.

Eighth. In liver wounds the hæmorrhage must be controlled and the peritoneal cavity cleansed. In some cases it may be well to drain the liver wound separately, by inserting a glass tube, as suggested by Dr. M. Price. A fatal case of mine, with bile duct cut, might have recovered had I used the tube.

Ninth. The kidney must be removed if wounded and bleeding. This was done in the only successful case; and in the other four cases, all fatal, the kidney was removed in two and left in two.

Tenth. The hydrogen gas test is only of use in demonstrating the closure of all the perforations, and should be used just before closing the abdominal incision. Dr. Senn detected an overlooked perforation by this means and saved his patient.

Eleventh. Irrigation should always be copious and thorough, and never omitted when the digestive track is perforated. It is the best treatment we have for shock; diminishes the thirst that is so often annoying; and is the best means of guarding against septic peritonitis. Twenty-nine of the seventy-four deaths were due to this septic infection.

Twelfth. The drainage tube should rarely be left out. I have never known it to do harm, and certainly some of the recorded cases would have done better had the tubes been inserted. The omission of the drainage tube was the cause of death in one of my patients. In drainage cases the mortality was less than in non-drainage cases, notwithstanding the former were in a far more desperate condition at the time of operation than the latter.

FRACTURES OF THE BASE OF THE SKULL, AND THEIR TREATMENT.

Read by Title in the Section of Surgery and Anatomy, at the Fort-first Annual Meeting of the American Medical Association, Nashville, Tenn, May, 1890.

BY HAL C. WYMAN, M.S., M.D.,
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Benjamin Bell, of Edinburgh, writing about 100 years ago, said: "A great variety of symptoms are enumerated by authors as indicating a compressed state of the brain from external injuries, but the most frequent, as well as the most remarkable, are the following: giddiness, dimness of sight, stupefaction, loss of voluntary motion, vomiting, apoplectic stertor in the breathing, convulsive tremors in different muscles, a dilated state of the pupils even when the eyes are exposed to a clear light, paralysis of different parts, especially of the side of the body opposite to the injured part of the head, involuntary evacuation of the urine and fæces, an oppressed and in many cases an irregular pulse, and when the violence done to the head has been considerable, it is commonly attended with a discharge of blood from the

nose, eyes and ears. Some of the milder symptoms, such as vertigo, stupefaction, and a temporary loss of sensibility, are frequently induced by slight blows upon the head, and as they often appear to be more the consequence of a shock or concussion given to the brain, than of compression induced upon it, they commonly soon disappear, either by the influence of rest alone, or by other means to be hereafter pointed out."

I have quoted these lines from the great surgeon because they indicate so clearly the symptoms which may in whole or in part present in a case of fracture of the base of the skull, and also indicate the distinction to be made between the terms concussion and compression. I have often thought it was unfortunate that these terms must be used in defining the state of the brain after great violence has been done to it. Would it not be better to indicate the pathological condition in these respective consequences of violence to the head, and say, injury to the head with or without internal hæmorrhage. We could leave the term "compression" for use in those cases in which the symptoms so carefully enumerated by Bell have developed without a history of recent injury. Fractures of the base of the skull are so constantly fatal, that men of wide experience are loth to believe they ever terminate in any other way.

I have examined, post-mortem, thirty-four cases of fracture of the skull resulting in death, of which number twenty-six were fractures of the base of the skull. In the majority of them the hæmorrhage which caused death was poured into the space between the bone and the dura mater, and the middle meningeal artery was wounded. In the minority, the hæmorrhage poured into the substance of the brain from rupture of the vessels of the pia mater, or the cerebral arteries, and death was probably due to concussion and disturbance of brain cells. In many of the cases the patients lived several days after the injury was received, before the pressure of the clot on the brains had squeezed the vitality entirely out of them. I could not help contrasting these cases of fracture of the base with cases of fracture of the vault of the cranium, in which the hæmorrhage was poured out on the cerebral convexity. The majority of such cases recover, as is well known, when properly treated. It occurred to me that if we could devise some means by which we could abstract the clot from the base of the brain, precisely as we abstract it in cases of fracture affecting the cerebral convexity, we might cure many cases which now end in death. It is a well known fact that the majority of fractures involving the cerebral convexity will recover after trephining, while fractures of the base of the skull in almost every instance result fatally, and are very rarely trephined. This may be owing to the supposition that the fracture of the base of the skull involves the pons, the medulla, and those parts of the brain more essential to life, and that death is due to such injuries rather than the presence of the clot. But since in almost all cases of death following fracture of the base of the skull, death results from pressure rather than from inflammation of the brain, I do not see why an operation which removes the clot and the pressure, would not be the right thing to perform. No doubt the operation has not been commonly performed, because of the great difficulty of reaching the basal portion of the brain, through the large muscles which cover it. After a little attention to the history of trephining, I find that the earlier operators used the trephine much more freely than we do nowadays. There is no difficulty in finding cases where they perforated the skull numbers of times, before finding the clot, and they did not seem to hesitate for fear the frequent use of the instrument that way was endangering the patient's chances of recovery. I find also that they boldly cut away the strong muscles which are attached to the occipital bone, the sphenoid, and the temporal, to bare the bone and trephine at the point where the clot could easily be removed. Now if we were to use the trephine with the same freedom with which it was formerly used, I think that our modern antiseptic methods would give us better results than the ancients obtained.

The treatment which we commonly apply to the fracture of the base of the skull is equivalent to doing nothing at all. Simply taking a little piece of cotton, dipping it in an antiseptic solution, and then stuffing the patient's ear with it, is about all that is usually done.

To distinguish the fracture of the base of the skull is not always easy. There are several signs which are likely to be of value. First and most important of these is the general fact that fully 80 per cent. of all fractures of the skull involve the base—this fact makes the danger of mistaken diagnosis very slight. Orbital ecchymosis, watery discharges from the ears and nose, or bloody discharges from the ears and nose, paralysis of the cranial nerves, are all signs which are sometimes present in cases of fracture involving the base of the skull.

The presence of orbital ecchymosis is significant as indicating the existence of a fracture through the anterior fossa of the base of the skull. While the presence of paralysis of the cranial nerves, the third nerve for example, is unmistakable evidence of the presence of a fracture of the middle fossa.

The escape of blood from the ears, or the escape of serous fluid, in my experience, has been comparatively rare, and is in my judgment one of the weakest of all the signs which are commonly supposed to have to do with a fracture of the base of the skull. Its absence is practically no evidence that a fracture of the base does not exist.

In any case in which the trephine is applied to the vault of the cranium and the elevation of a depressed fracture or the removal of a clot from the cerebral convexity does not improve the condition of the patient, I would trephine the base of the skull and expose the fossæ which have been fractured, and contained clots twenty-six times in the thirty-four autopsies which are the basis of this study.

I believe the most important point in the diagnosis of fracture of the base of the cranium, in cases admitting of treatment by the operation of trephining, is an interval of sense following an injury to the cranium. This sense interval cannot be emphasized too much. It appears in this way: A man meets with a fall, or receives a blow on the head. He is shocked, for a time unconscious, perhaps unable to say how the injury was received; he walks to his home, several blocks perhaps, and arriving there sinks into a chair, is faint, vomits perhaps, but speedily becomes unconscious; in this unconscious condition his muscles may tremble, he may be nervous or irritable, may be paralyzed upon one side or the other, his tongue may be protruded to the right or the left, his pupils may be contracted or dilated, it makes no difference; the important thing is the fact that after an interval of sense following a stunning blow the man again becomes unconscious, and sinks into a condition in which death is imminent, unless the clot is removed. The presence of paralysis, the size of the pupils, and the condition of the stomach, are of little or no value as diagnostic signs; the one important thing is to recognize the existence of an interval of sense, and it means simply that the violence has caused a rupture of a blood-vessel, that in consequence of the rupture of that vessel, a clot has formed between the dura mater and the bone, or within the membrane, and it is gradually squeezing the vitality out of the patient, and will continue to do so until it is removed. Now, one of the great difficulties that we have to deal with in these fractures of the base of the skull is the removal of the clot of blood which adheres so firmly to the membranes that, notwithstanding our opening is an inch or more in diameter, the clot will not readily flow away. It must be entirely removed in order to do the patient the greatest possible good. It will be necessary, in many of the cases, to make more than one opening; at least, to make a second opening, removed a short distance from the first. Then a scoop must be used because of the adhesion of the clot.

I have seen numbers of cases in which the patients have not been improved by the trephine, while the autopsy showed the presence of a clot too large to be removed through the opening made by the trephine, and the firm adhesion of the clot to the membrane showed the need of a scoop for the purpose of facilitating its removal. Such an instrument I have made out of a watch spring, and found it very efficient. The temper is taken from a piece of watch spring about 6 inches long by holding it a moment in a gas jet, then it is folded on itself, making a loop about ½ inch in diameter. The shaft of the instrument can be bent in any direction, so that it can be passed through the opening made by the trephine, and the anterior, middle and occipital fossæ of the base of the skull be thoroughly scooped for clots.

The great point in all of these cases, the 80 per cent. of all cases of fracture of the skull, is to find the location of the clot, since death in the majority of instances results from the pressure of the clot of blood upon the base of the brain. Now, owing to the fact that eighteen out of the thirty-four cases which came under my observation presented a clot, the result of a rupture of the middle meningeal artery, the great majority of all the cases would be properly reached, the clot properly scooped away, providing the trephine was applied at a point where the middle meningeal artery could be easily reached. Such a point is found immediately above the zygomatic arch on the affected side. To apply the trephine at such a point requires an extensive section of the scalp, and a dissection of the temporal muscle, with ligation sometimes of the temporal artery. It is dangerous also to certain branches of the seventh pair of nerves, although I have never been so unfortunate, notwithstanding I have made the operation a number of times, as to divide the facial nerve and blemish the patient. The gravity of the case, however, which makes an operative procedure necessary, is sufficient to justify the risk of wounding nerves which might impair the facial expression.

If palpebral ecchymosis, and the character of the violence, point to the presence of the clot in the anterior fossa, trephine just above the superciliary ridge, on each side if need be, introduce the scoop and clean out the fossa.

If the clot is localized in the occipital fossa, divest the trapezius muscle from its attachment to the occipital bone, apply the trephine and use the scoop. The skull and scoop which I now exhibit to you are intended to illustrate the fact that the trephine alone cannot always compass these cases, and that it has a convenient and powerful ally in a properly tempered scoop which may be pushed between the dura and the bone in any part of the cranium with great ease, and between the membranes when delicately manipulated, without danger of raking away the cerebral substance which has been uninjured by the violence. In cases of gunshot fracture the greatest caution must be exercised in using it, or the brain substance, more friable than the usual clot, will be needlessly sacrificed.

I might summarize my views of fracture of the base of the skull in this way: Trephine all cases

which have had a sense interval; trephine the basal portions of the skull; trephine until the clot has been entirely removed with a properly constructed scoop.

GUNSHOT WOUND OF BRAIN; RECOVERY WITH BALL REMAINING THEREIN.

Read in the Section of Surgery and Anatomy at the Forty-first Annual Meeting of the American Medical Association, held in Nashville, Tenn., May, 1890.

BY J. LEE McCOMAS, M.D.,
OF OAKLAND, MD.

As the profession is interested in the localization of lesions of the brain, and this case being one of an unusual type, I present it for your consideration, it being an accurate record, carefully noted while in constant attention at the bedside.

William C., æt. 16, right-handed, was accidentally shot September 29, 1889, at 2 P. M., by a companion, who was above him on the mountain side when the gun went off.

The cartridge is known as 22 short, and contains 3 grs. of powder; weight of ball, 28 grs., and conical. The ball entered a little below the internal end of the right arcus superciliaris about the attachment of the corrugator supercillii, passing through the frontal sinus downward and backward to the left, as indicated by the probe. Considerable hæmorrhage at the time he was wounded, and he kicked and threw himself about very much. Was carried home in an unconscious condition.

I was called to see him at 5:20 P. M. Found him lying on his back on a lounge, head elevated. Probe in wound 2½ inches; brain protruding, and bleeding slowly; pupils dilated and insensible. The boy was still unconscious; vomiting at intervals, and blood in right nostril. T. 97⅘°, P. 52, R. 22. Pulse irregular and extremities cold. On gently touching the probe from side to side it dropped in track of ball; one inch deeper to left side I could feel no ball. I turned him on his right side, lowered his head, disinfected and cleaned wound, removed protruding brain when the coagulum came out, followed by a little flow of blood. I could find no spicula of bone, but probe passed freely in frontal sinus. I then applied iodoform gauze over wound. At 5:35 P. M. I gave him hypodermic of ℥j fl. ext. ergot and an enema of am. carb. and fl. ext. ergot; repeated it at 8:15 P.M. At 8:26 P.M. pupils responded. Testes drawn up close to abdominal ring. At 8:30, T. 98°, P. 63 and irregular; vomited, mucus rattling in throat, grinding his teeth; 11:38 P. M., has vomited about every hour and a half since 8:30 P. M.; P. 54, R. 22; surface very cold. Ordered carbonate of ammonia every two hours as an enema, and applied hot water bottles.

Sept. 30, 8:15 A. M.—Laid quiet all night, but not in deep coma; T. 98⅖°, P. 60, R. 20. 2:23 P. M., comatose; T. 98°; passed urine in bed; did not realize it. Lips greatly swollen and purple, wound dry; lies with knees drawn up and hands clasped between thighs. 7:30 P. M., bowels and urine passed in bed, but was very restless previous; put clean shirt on him, and the effort aroused him a little. 11 P. M., P. 52, comatose and skin cold. Gave 3 drachms whisky and 20 grs. carb. am.; later an enema of bovinine. Lies quietly, no muscular twitching; arteries of head and neck very prominent and visibly pulsating.

Oct. 1.—T. 98°, R. 18, deep and slow. Fearing inflammatory symptoms, I cut his hair off close without disturbing him. He turned his head from side to side on the pillow, scratching it at intervals through the morning.

Oct. 2, 8:25 A. M.—Quiet night; T. 98⅖°, P. 60, R. 16; tears flow from both eyes; yawns frequently; is restless; rubs palms of his hands together; grinding teeth; the mucus in his throat troubles him very much; coughs and swallows with difficulty; had slight bronchitis a few days before accident. 10:55 A. M., lying more quiet; hands clasped over abdomen. I asked him if he wanted to urinate; he placed his hands on his penis, nodded "yes," and did so. Breath very offensive; became very chilly, shivering, skin very cold. Gave an enema of whisky, ½ oz., with bovinine, 1 ℥, and he became more comfortable; I repeated it in half an hour. 4:35 P. M., opened his eyes, gazed at me with a confused stare; ptosis of left eye complete; right eyelid almost swollen shut; threw his head back to look at me; T. 99⅕°, P. 70, R. 21. 8:30 P. M., temperature being the same, I gave 10 grs. calomel, bowels being torpid.

NOTE.—The squint of right eye as seen in the engraving is of secondary deviation, caused by improper direction of the point of vision by the photographer. I was not present when the picture was taken.

Oct. 3, 10:50 A. M.—T. 98½°, P. 63, R. 18; rested well all night; is more conscious; sat up and drank soup and bovinine; hands and arms very cold; right eyelid still swollen, and the wound very much tumefied; abdomen sunken; at a request buttoned his shirt at the neck; caressed baby sister; answered "yes" and "no" to questions by shake of the head. 1:45 P. M., gave an enema of carbonate of ammonia and per orem, 7 grs. each of calomel and jallap, as his bowels were still torpid; indicated his taste by a wry face; asked him if it was good; shook his head "no;" drank beef-tea and swallowed better; aphasia complete; frontal veins very large, no other to be seen; arteries of head very prominent. At 2 P. M. passed urine in urinal, at request; swallowed better. 4:45 P. M., repeated the calomel and jallap. 8 P. M., became very restless, passing wind; finally bowels acted in bed, and he appeared to realize what he did. This depressed him very much, and I gave him 2 drachms of whisky and bovinine per orem. Slept till 10 P. M., when he became restless, and bed pan being placed he had an action of the bowels and urinated, then relapsed into an apparent sleep.

Oct. 4, 6 A. M.—Woke up and washed his hands and face; gave him a glass of whisky and water; took it in his left hand and drank it. Asked him if he wanted breakfast; said "yes," first word spoken since he was shot. Gave him 6 ozs. of beef soup, milk and bovinine; then he requested a "*wink o' waha*" (for drink of water); took glass in both hands and drank. At 9:15, with great difficulty in articulation, made same request. Asking him if he understood all said to him, said "yes" plainly, at same time nodding his head. Evidently he understands what we say, as he smiles at a joke, but seems disposed to sleep. Right eye closed and lids stuck together; resists the washing of his eye, and it irritates him very much; wound dry and crusted over; all veins of head visible; when let alone, relapses into a sleepy condition; takes long and deep inspirations, but expires slowly; for "not now" says "*naw naw*;" lips and wound less swollen; arterial tension less; is very restless; turns from side to side; says "*bows hur mae*" for bowels hurt me; peristaltic action and passing wind. 10:30 A. M., expressed a desire to pass water, did so, and then drank a glass of milk; clasps his hands and revolves one thumb over the other; works great toe of right foot; T. 98°, P. 61, R. 16; surface cold; called for "*sanin goo tu eat;*" "what would you like?" he replied, "*stu oyter;*" gave soup and bovinine; testes down in scrotum for first time since injury; on irritation of genito-crural, they respond promptly; tested his sense of smell; put tincture of camphor to his nose; said it was "*sine kine camper;*" articulates no better. 3 P. M., gave carbonate of ammonia enema and shaved his head; bowels acted and urinated; he asked for "*ba pan;*" action depressed him, and I gave ½ oz. of whisky. 8:35 P. M., T. 98°, P. 60, R. 18; lies as if sleeping; skin very cold; rouses up if spoken to, and answers intelligently, though not distinctly, and becomes greatly excited when we do not understand him; sighs often and turns in bed.

Oct. 5, 10:20 A. M.—T. 98⅘°, P. 59, R. 15; passed a quiet night; very irritable; flies cause him to swear fearfully, but not distinctly; raves if requested to repeat; when let alone, relapses into a quiet condition with closed eyes, but if a fly alights on him he becomes excited. During the night called for milk and water frequently; is quite rational; arteries not to be seen, and veins not so full. 10:35 A. M., gave a drink of whisky (℥ ij) and water; asked him what it was, said "*whisty and waha;*" right eyelids stuck together, but less swollen; pupils respond promptly. I told his mother to make a cap for his head to keep the flies off; half an hour afterwards he called for it, and became angry because it was not ready. Requested to raise the window curtain to get more light. 1:40 P. M., T. 98⅖°; P. 55. 2:40 P. M., T. 99°, P. 60, R. 16; ears very red; asked for "*wink o' waha;*" sat up and drank perfectly; tries to talk; cries and gets very angry and swears because we cannot understand him; puts tongue out well, very slightly inclined to right side. 6:40 P.M., T. 98⅖°, P. 51, R. 17; seems sleepy but easily aroused; smiled and recognized a friend and called him by name.

Oct. 6, 12:20 A.M.—I was sent for in great haste; found his P. 50, T. 98⅕, R. 15; very weak and breathing hardly perceptible. Gave him 2 drachms of whisky and water per orem, and ½ oz. of whisky and 10 grs. of carbonate of ammonia as enema in half hour thereafter. 1:10 A.M., P. 56; called for chamber and bowels acted; as this depressed him, I gave ½ oz. of whisky and milk; heart's action jerky and labored on inspiration. 2:45 A.M., P. 60, sleeping and breathing regularly; quiet till 6 A.M., then became restless. 11 A.M., T. 98, P. 53; wound dry and crusted, like vaccination; tries to talk, but articulates badly; realizes it and frets; for "can't you understand?" says "*can you no unerstan?*" for "what time is it?" says "*can wa time is it?*" for "give" he says "*ginn;*" he asks, "*when goin have binna?*" for "when are you going to have dinner?" Became irritated and began swearing at a terrific rate at the flies. I find his *sense of smell and taste perfect.* When requested to repeat anything wrongly spoken, does it often correctly. 3:25 P.M., T. 98⅗°, P. 56, R. 18; calls comb "*kame;*" when told it was "comb" said, "yes, I meant comb;" named clock and scissors correctly; read large print, *Maryland Journal*, though with difficult pronunciation: takes interest in my actions in his room, and obeys my requests; inspirations deep and pause before each expiration; pulse

more regular; on percussing his head, said "*tain no use tapin, fine no pain or tender;*" calls flies "*shies,*" and for mash says "*shash;*" hummed the tune "Days of Days Absence" correctly. 6 P.M., ate soft boiled egg; two hours after became very unruly, swearing and kicking if disturbed; urinated four times between 12:25 A.M. and 10 P.M.; urine milky when first passed, on standing became pale red; heavy light-colored deposit; specific gravity, 10.30; full of leucin and uric acid and amorphus urates; quantity normal; reaction very acid.

Oct. 7, 11 A.M.—T. 98⅕°, P. 58; mind clear; asked for tobacco, but spit it out, said it was nasty and too strong; has very little saliva; said "*set the bore*" for shut the door; looked out and said, "*jimany caoky, I din know it was snowin;*" seldom sounds the "r," says "*wope*" for rope; vision is correct; complains of left eye hurting; right eye open and clear; œdema all gone; right eye very sensitive; ptosis still continues. 7 P.M., very excitable and cross, grinds his teeth and cries; picked scab off of wound and tries to rub it; soft parts around it very much elevated and hard, depressed in centre; relapsed into a sleep; holds his breath, then takes long and deep inspirations, then expires slowly; took tapioca and cream, soft egg and oyster soup for dinner; some time afterwards became restless and threw himself about; swears correctly, but cannot say what he wishes in other things, which excites him; gave calomel and jalap every three hours. 9:30 P.M., sleeping. During the evening his father told him I did not like it because he swore so; said he was sorry, but could not help it and did not mean to do so.

Oct. 8.—Rested fairly well all night; wants to dress and sit up; says "*ats wata gona do too;*" T. 98, P. 60 and irregular; said "*pa at staves agehen too hot*" for "that stove is getting too hot;" he asked how he got shot; asking him how he knew he was shot, said someone said so; "*how lon I bin sit?*" we told him ten days, and he was surprised; *angle of right upper lip elevated and the left lower depressed, and lips everted and teeth show* when he tries to talk. Got up at 11 A.M. and sat in the chair; walks well, ptosis improved, slight convergence of left eye.

Oct. 9.—T. 98⅗°, P. 58; passed a good night, bowels acted, is very hungry, less irritability of temper; rubs his left eye, says it feels like hair was in it; closes it to look at anything, but says he does not see double; took egg custard, milk, bovinine and potatoes to-day. 8 P.M., is very restless and frets, but says he has no pain, but I think eggs in any form disagree with him.

Oct. 10, A.M.—Had restless night till bowels acted; still grinds his teeth when sleeping; says something is wrong in his head; it is not a pain, but does not know what it is; attempts to sit in a chair, walked back to his bed in a few minutes, said it was too much; wound dry.

Oct. 11, A.M.—Rested well all night; tore scab off of wound, a little healthy pus weeping out; I can feel no bone; the probe irritates him, as the wound is very sensitive; played a game of cards to-day and beat his father in the game.

Oct. 12 and 13.—No special change in condition.

Oct. 14.—Won four out of seven games of "seven up;" will not obey my request to keep quiet.

Oct. 15.—Complains of headache; no rise of temperature; otherwise seems well.

Oct. 16.—Wound patulous, depressed in centre, discharging considerable greenish pus of a ropey, tenacious character; fungus granulations like necrosis, but no bone to be felt.

Oct. 17.—Sleeps well, eating well; wound still discharging, but less in quantity. I tested his power of writing, calling for the alphabet, but he would make a "b" for every letter; saw his error after his attention was called to it, but could not correct it. I saw him no more until Nov. 1, when he was out and apparently well, the wound discharging, a little hard elevated tissue around it, depression in the centre.

Dec. 1.—Was sent for and found him in violent excitement from drinking, no one could control him, would listen to no reasoning. I gave him morphia and bromide, and finally he went to sleep, and the next day we could discover no injurious effects from the spree.

From investigations made upon a skull about the same measure as this boy's I am led to believe that the ball passed through the right frontal sinus, entering the first frontal convolution posteriorly to the cristagalli, passing downward and backward above and over the olfactory and optic nerves at the optic foramen to the inferior frontal convolution, or Broca's speech centre, and from all indications lies internal to the anterior clinoid process at or near the fissure of Sylvius. "Corticle disease of those frontal gyri *which lie anteriorly to the motor centres* is often attended with no marked symptoms of a diagnostic character. The higher mental faculties may occasionally give signs of more or less impairment. Connected thought, the control of the emotions, accurate reasoning and concentration of the attention are particularly difficult under such circumstances."[1] To sustain this theory we have in this particular case listless condition, unusual profanity, the flow of tears, crying and mental depression.

That Broca's speech centre and the isle of Riel are involved is indicated by the aphasia, as he understood everything said to him, made efforts to reply, but could not regulate his speech movements, and was painfully conscious of his defects, as expressed by crying and becoming angry if we asked questions or requested him to repeat. We also have *paraphasia*, for when he could speak he uttered such sentences as "*can wa time is it?*"

[1] Ranney.

and "*can you no unstan?*" "*kame*" for comb. Then he could not write the alphabet, making "b" for every letter called for, and realized his error if attention was called to it.

Adjacent to Broca's convolution we have located that part of the brain that governs retraction and elevation of the opposite angle of the mouth and elevation of the *ala nasi* and upper lip, with depression of the lower lip on the opposite side.[2] The important points are, what portion of the objective symptoms depend upon the presence of the ball, and what from extravasated blood? The ptosis, strabismus, dysphagia and asphagia are of the past. That those symptoms were produced by extravasation and absorbed, looks reasonable.

If the ball had penetrated farther back, it would have entered the first superior temporal lobe, and "we would have loss of, or impairment of, the sense of taste or smell (if destructive in character), or subjective odors or tastes (if irritative in character);"[3] but he tasted his medicine and recognized tinc. camph. If it had gone more to the right, it would have injured the optic nerve or internal carotid. *Where is the ball?*

His family moved away some fifty miles, and I went to see him May 5. They tell me they can see no change in him, only he is more irritable and quarrelsome. Is following the painter's trade and works at great heights, and says he feels steady while on the scaffold. I notice his mouth very slightly draws to the right when talking; his tongue also inclines a very little to the right; eyes act normally and sight perfect; he can read and write.

THE TREATMENT OF FLAT FOOT BY THOMAS' METHOD.

Read in the Section of Surgery and Anatomy at the Forty-first Annual Meeting of the American Medical Association, Nashville, Tenn., May, 1890.

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To the frequent occurrence and annoying symptoms of flat foot, we no doubt owe the large number of methods of treatment: we may choose between the braces of Whitman, Roberts, Woodbury, Sayre and others; the traction shoe of Shaffer and other mechanical appliances for forcibly twisting the distorted foot into position; the operation of Ogston and those who have modified his procedure; the supramalleolar osteotomy of Trendelenberg; tenotomies of different muscles; the treatment by means of pads of various materials placed under the arch of the foot; the use of suitable foot and toe exercises; the employment of artificial muscles to hold up the flattened foot; and the method of Hugh Owen Thomas, of Liverpool.

This list is probably not complete, but it is certainly varied enough to suit all men and all cases.

It is not my purpose in this paper to criticise or compare these methods one with another, but simply to give the results of my experience with one line of treatment and to try and show in what class of cases it has been successful, and also in what cases, in our opinion, it fails, and, consequently, should not be used.

The report is based upon a study of over fifty cases of flat foot seen at the Out-Patient Department of the Hospital for the Relief of the Ruptured and Crippled, New York, during the past two years, which were treated by this method. The histories of twenty-five of these cases which have recently been examined are given in a table appended to this paper.

The plan of treatment of Mr. Thomas was derived from "clinical observation," and a picture of a flat foot sole is given in his work on "Diseases of Hip, Knee and Ankle Joints," published in 1886. The method consists in raising the inner side of the sole of the shoe a sufficient amount to cause the patient to walk in "varus" or on the outer side of the foot. The inner side of the foot is thus raised, the arch relieved somewhat of the downward pressure of the weight of the body, which is to a certain extent transferred to the ground through the cuboid rather than the scaphoid bone. This increase in height on the sole of the shoe extends from the extreme back portion of heel to just back of the great toe, and slopes gradually from the inner to the outer side.

In the manner in which the shoemaker does his work and on the fit of the shoe depend much of the success of the treatment. The shoe should fit properly and snugly, or the foot will simply turn inside it and not be "rolled over" to the outer side. The raised portion should not extend beyond the proximal end of great toe, as it is desirable that the toes should rest on the ground. The shank should be firmly supported, as it is here that the pressure comes, and it is often desirable in fixing "ready made" shoes where this part is particularly weak, to have it reinforced. These objects are best accomplished in a well fitting laced shoe of the Waukenphast type. Care must be taken that, if there are bunions or corns on the outer side of foot, they are not pressed upon in walking or standing, as is very apt to occur when the inner side of the foot is raised. As soon as the raised portion begins to wear off, it should be replaced, and, in our experience, we find that a "building up" of ¼ to ½ inch is the proper amount. The patient should be taught to walk straight; that is, with toes pointed in front of him or nearly so, and not with feet widely separated and toes pointed outwards, for by that act alone, the deformity is increased and the trouble aggravated.

[2] These symptoms existed in this case as above stated.
[3] Ranney.

Before stating in what class of cases Thomas' method best succeeds, and in what class it fails, I think it well to briefly give the symptoms of flat foot, and will take the liberty of quoting from a recent article of Dr. Whitman, read at the New York Academy of Medicine, Section of Orthopædic Surgery, in March, 1890. He says the diagnosis of flat foot is made from the following symptoms:

"1. Pain in the feet, aggravated by standing or walking, especially on going up or down stairs. The pain is usually about the arch, sometimes running up the leg, or it may be below the external malleolus at the ball of the foot or heel. 2. Stiffness and weakness of the feet, these symptoms combined with an inelastic gait, with toes turned out, some congestion about medio-tarsal joint, a moderate prominence below and in front of the internal malleolus, with pain at this point on suddenly moving or twisting the fore foot, also a considerable flattening of the arch when weight is borne. In well marked cases the deformity is so apparent that any one who has ever heard of flat foot should be able to make the diagnosis at a glance. Here the os calcis is tipped over to the inside, the astragalus has rotated and slipped downwards and inwards, forming the well marked projection at the inside of the foot, the arch has disappeared and the fore foot is so displaced outwards as to become a useless appendage. In such cases we find to a varying degree the spasm of muscles, congestion and inflammation of the soft parts often so marked as to be mistaken for "caries of the tarsus."

From this short but complete account, we see that there may be many degrees of severity of flat foot, and for convenience we may divide them into three classes. In the first class, the mildest cases, the symptoms are a slight sinking of the normal arch, occasional pain, fatigue in walking or standing. These cases rarely consult the surgeon unless the pain becomes too annoying, and by use of medicines, slight rest and liniments they fail to get relief.

In the second class of cases the deformity is well marked, the pain more or less severe and constant, and slight spasm is present. The spasm may be easily overcome and may not be present at all times. This combination of symptoms represents the class of cases most often seen.

The third class comprises all the more severe cases, the acute or inflammatory flat foot, what König and Lorenz describe as "contractured static flat foot;" also the cases secondary to traumatisms, especially Pott's fracture. In these patients the spasm is a marked symptom, the pain is severe, displacements of astragalus, scaphoid and os calcis exist, and change in the muscles, ligaments and tendons.

In cases of a mild type the treatment gave relief, and it was prompt and permanent while the treatment was continued. In some, after treatment had been stopped a certain length of time, a relapse occurred; this, as in the former instance, was promptly relieved by the same treatment. In the more severe cases, but not in the severest, in most instances the treatment was also successful; in cases with slight spasm, that symptom soon disappeared and the foot became supple and at the same time less painful, the flattened arch became more natural, and the symptoms were more or less completely relieved. In the worst cases the treatment failed, and I think the reason is, that to tilt the foot to the outer side presupposes some mobility in tarsal joints as well as in ankle, and where they are held in marked spasm such can not occur. Again, if the foot is very tender and painful it will not stand any pressure long continued, and such cases can only be successfully treated by complete rest, preferably in a plaster of Paris splint or some immovable dressing, after the foot has been forcibly twisted into shape by manual force, or by a Thomas twister or other device, patient being under the influence of an anæsthetic. Here the dislocations must be reduced, adhesions broken up, and foot forcibly placed and held in a correct position. In treating all cases, constitutional symptoms should not be disregarded; gouty and rheumatic cases must receive suitable medicine, the weak need tonics, those using the feet too much need rest, ill-fitting shoes must be cast aside, ingrowing toe-nails, corns and bunions receive proper care, feet be properly looked after, and such exercises be carried out as raising the body on the toes a number of times each day, practicing adduction and abduction of the forepart of the foot, and such other movements as will strengthen and develop weakened muscles and ligaments, aided also by massage and douches of hot or cold water.

In cases of severe spasm and deformity, after these have been overcome, much good may be done and relapses prevented by then raising the inner side of shoe, thus supporting the foot. The advantages of this form of treatment are:

1. Simplicity.
2. Success in proper cases.
3. Cheapness.

Any intelligent cobbler can at short notice and slight expense "build up" a pair of shoes, whilst to make a proper brace means taking a good plaster cast in the correct position of foot, and more or less skill on the part of the instrument maker in properly fitting and constructing the brace, and its intelligent application by the surgeon and patient.

Thomas' method is well worthy of trial, and especially by those who have not the facilities for making the various braces. If it fails to give the desired relief, the surgeon then has the choice of any of the other methods previously alluded to; and certainly, in the treatment of all diseased

conditions, the simplest methods should first be tried, unless good and sufficient reasons exist for not using them.

In the following table the results of treatment are given as "improved" and "not improved." These terms are used rather than the term "cured," as in no case with a marked deformity at the start have we seen it completely disappear. The pain and spasm may have vanished and the patient be perfectly comfortable and to all intents and purposes cured completely, yet, on comparing the two feet, if one only was originally affected, it was invariably found to be flatter than the other, though in many instances not as flat as when treatment was begun. If both feet were affected, they were found to be flatter than the normal feet should be.

No.	Sex.	Foot Affected.	Age.	Class.	Duration before Treatment	Duration of Treatment	Time since Treatment	Result.
1	F.	Both.	17	2	3 mos.	2 mos.	1 year. [ment.	Imp.
2	M.	"	19	2	4 yrs.	6 mos.	Still under treat-	Imp.
3	F.	"	15	2	8 mos.	2 mos.	18 months.	Not imp.
4	F.	"	14	1	1 yr.	8 mos.	1 year.	Imp.
5	M.	"	26	1	3 mos.	8 mos.	1 year. [ment.	Imp.
6	M.	"	18	1	1 yr.	6 mos.	Still under treat-	Imp.
7	M.	"	23	2	1 yr.	1 yr.	" " "	Imp.
8	M.	"	23	2	4 wks.	1 yr.	1 year.	Imp.
9	M.	"	21	2	1 yr.	1 yr.	1 year. [ment.	Imp.
10	F.	"	13	2	6 mos.	1 yr.	Still under treat-	Imp.
11	F.	"	44	3	1 yr.	2 mos.	4 months.	Not imp.
12	F.	"	17	2	3 yrs.	4 mos.	6 months. [ment.	Imp.
13	M.	"	16	2	1 yr.	1 yr.	Still under treat-	Imp.
14	M.	L.	34	3	1 yr.	2 wks.	1 year.	Not imp.
15	F.	Both.	40	3	3 yrs.	4 mos.	1 year.	Not imp.
16	M.	"	16	2	2 yrs.	6 mos.	6 months.	Not imp.
17	M.	"	19	3	3 yrs.	6 mos.	6 months. [ment	Imp.
18	M.	"	45	2	1 yr.	1 yr.	Still under treat-	Imp.
19	M.	"	8	1	1 yr.	1 yr.	" " "	Imp.
20	F.	"	7	3	2 yrs.	2 mos.	1 year. [ment	Not imp.
21	M.	"	11	1	2 yrs.	1 yr.	Still under treat-	Imp.
22	M.	"	35	2	2 yrs.	1 yr.	" " "	Imp.
23	M.	R.	48	2	1 yr.	3 mos.	6 months. [ment	Imp.
24	M.	L.	33	2	2 yrs.	1 yr.	Still under treat-	Imp.
25	F.	Both.	19	2	2 yrs.	2 yrs.	1 month.	Not imp.

THE INFLUENCE OF LOW TEMPERATURE ON THE SYMBIOSIS OF MICRO-ORGANISMS WITH REFERENCE TO PNEUMONIA.

Read in the Section of State Medicine at the Forty-first Annual Meeting of the American Medical Association, held in Nashville, Tenn., May 21, 1890.

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It is a well established fact in bacteriology that a certain temperature range is requisite for the propagation of microörganisms, some of which may have a wide range of temperature, while others require a more limited degree, which can not be departed from without jeopardizing the life of the microörganism. The same may be said in a general way concerning their resistance to high temperature; some are killed at 50° C., while others live for a considerable time at a temperature over 100° C.

The bacteria, which are widely distributed, seldom exist alone, being usually associated with others, which constitutes the state of symbiosis. In this condition the bacteria exist and exert peculiar influence upon each other as to their manner of growth and individual virulency. A good example can be given showing the dependence upon each other of the different varieties of bacteria found in common garden earth, where the several kinds of ærobic and anærobic germs exist, live and propagate in free oxygen, but if separated from each other the anærobes cannot be grown except in an atmosphere devoid of oxygen.

In reference to the pneumococcus, the organism which we consider the specific agent in the production of lobar pneumonia, certain peculiarities have been observed in its life history which are deemed worthy to record.

The majority of those who have written concerning this microörganism appear to have given as its habitat the buccal cavity, where it will exist indefinitely. The medium of contagion is unquestionably the salivary secretion and the sputum from those suffering with pneumonia. The statement in reference to its presence in the saliva of persons, as given by some, fixes the percentage entirely too high, and it needs to be criticised.

All observations, so far, have been made upon cases not pneumonic in hospital wards where cases of pneumonia either had been or were at the time under treatment. We will assert that under these conditions a much larger percentage of persons will be found to have the pneumococcus present in their saliva, than of those in the ordinary walks of life. It is, we think, safe to say that we have every reason to believe that cases of pneumonia have been contracted in hospital wards from other cases; this fact alone can be sustained by the observations of many clinicians.

The *materies morbi* of pneumonia requires as much, if not more care in its disinfection than does tuberculosis, for the majority of cases have violent delirium at some time during the attack, thereby rendering it extremely difficult to completely disinfect their sputa.

Thus, it will readily be seen that if such conditions exist in a room, or hospital ward, the pneumococcus can be diffused and find a nidus within the buccal cavity of a large number.

The investigations which we have made in this direction have shown the pneumococcus to exist in much greater numbers among hospital patients than in others, for the solution of which the above possibility is offered. The life history of the pneumococcus is quite well established. Studied experimentally, it grows best in the ordinary nutrient media, viz.: agar gelatin and bouillon between 35° and 38° C., with the peculiarity of ceasing to grow in about four days, and dying if not transplanted to fresh nutrient media

within that time. The inhibitory and germicidal agent is the ptomaine produced by the organism, rendering the media sterile. In the culture of the pneumococcus we simulate the conditions that are present in the buccal cavity. There the ptomaine, as fast as formed, is removed, either by absorption or by solution in the saliva, there being always the requisite amount of heat, moisture and nutrition present. At ordinary temperature it lives about three weeks; during the first week it grows to a slight extent, then remains stationary until it ceases to exist.

Granting that the medium of contagion is the saliva, we find that within this fluid quite a number of other bacteria are constantly present, usually non-pathogenic, which undoubtedly exert some influence upon the growth and virulency of the pneumococcus.

Experimentally it can be demonstrated that the microörganisms found in the mouth in conjunction with the pneumococcus *do* exert quite a controlling influence upon its development; for, if they are planted together in nutrient media, these being kept at blood temperature and transplanted every day upon fresh soil, within a few days the pneumococcus will have disappeared; occasionally some one or two of the other varieties will have disappeared also, or will have been materially diminished. This was found to be the general rule, but exceptions can be cited. Sometimes the pneumococcus preponderates over the other forms, and gains the supremacy. When the microörganism associated with others is kept at ordinary temperature, there is the same general result, although a longer time is required to bring it about. When the pneumococcus is grown with several bacteria non-pathogenic, and susceptible animals inoculated with this culture, it was demonstrated that the animals did not succumb, as in the control cases, although the same quantity of each had been taken for the inoculations. These animals, chiefly rabbits, which were inoculated with the mixed culture, were, after recovery, inoculated with a pure culture and found susceptible to the disease. This explains the reason why it has been noted that when an animal susceptible to the disease is inoculated with a portion of a pneumonic lung, it often shows no effect, although the microörganism can be isolated from the lung. The bacteria present in the lung post mortem exerts an inhibitory effect upon the pneumococcus, rendering it innocuous.

We now come to the question of low temperature upon the microörganism, and in this connection some of the experiments conducted on this point will be given.

Bouillon cultures of the pneumococcus were made and then inoculated with the following microörganisms: Bacillus Coli Commune, Bacillus Proteus Vulgaris, Bacillus Indicus, saprophytic bacilli from the mouth, Spirillum of Finkler-Prior, Spirillum Denkeri, and orange sarcina. These were placed in a thermostat and kept at a temperature of 37° C. for fifteen hours; they were then frozen solid and examined from day to day. At the end of five days there was quite a diminution in the number of bacilli and spirilla, save that of Coli Commune; there was no diminution of the pneumococcus. At the expiration of ten days the Proteus Vulgaris had entirely disappeared, leaving an active culture of the pneumococcus. The bacilli had diminished considerably in numbers, but none others had disappeared entirely. The number of spirilla in each culture had notably diminished. The sarcina had also disappeared. This series was carried on for forty days, during thirty of which the cultures were active; after that they began to decline, and in the succeeding ten days the pneumococci disappeared. Portions of lung tissue, six hours post mortem, were removed with the ordinary precaution and placed in large sterilized test tubes; some of these were sealed, others left open. One set was kept at a temperature of 37° C., another at ordinary degree, and still another was frozen. The lung contained bacilli, two varieties, a large micrococcus, and the diplococcus pneumoniæ. In those subjected to 37°, both sealed and open, the pneumococcus had disappeared at the end of seven days; the second, kept at ordinary temperature, were found to have lost their pneumococcus at the end of the sixteenth day; those which were frozen presented the same general outline in their behavior as in the experiments conducted in the symbiosis of microörganisms. There was a gradual diminution in the number of bacilli until the sixteenth day, when the number remained about stationary. Meanwhile the pneumococci appeared about the same until the thirtieth day, when there was a diminution of all the varieties of bacteria, and the pneumococcus could not be grown.

Sputa of patients suffering from pneumonia was treated in the same manner, exposing it to temperatures of 37°, ordinary, and freezing. Its behavior was found to be in all respects similar to the lung, only the virulence of the pneumoniæ was of slightly longer duration.

The occurrence of epidemics of pneumonia during the winter and spring months appears explainable in part by the foregoing experiments. The questions of individual susceptibility, predisposing influences of climate, and bad hygiene, are not to be overlooked in pneumonia any more than in tuberculosis; but it appears that, aside from these, there must be another factor to account for the epidemic form of the disease.

Variations of climate, associated with overcrowded living-rooms, when the microörganism is present in the sputum of an individual, certainly affords far greater chance of infection than if these conditions did not exist.

In the latitude where epidemics occur, during winter and spring months, there is a wide variation both in temperature and humidity, which is sufficient to lessen, if not destroy, other bacteria which exert an inhibition of the growth and modification of its virulence, so that the infective properties are increased. Pneumonia is distinctly a house disease. During the winter months the aggregation of people in homes, schools and factories is greatly increased. Aside from the necessary amount of artificial heat for personal comfort, the air is contaminated by respiratory excreta, the individual resistance lowered, and if the pneumococcus be present there is a fruitful field for the infective agent.

The conclusions we would draw from our observations are: That lobar pneumonia depends upon a special microörganism for its production; that its infective properties depend upon certain conditions and environments; its prevalence during winter months is due to the fact that the bacteria of pneumonia have greater resistance to cold than many other forms; that conditions are more favorable for the spread of infection by reason of the predisposing influences of climate and bad hygiene.

Hygienic Laboratory, U. S. Marine-Hospital, New York, May 16, 1890.

THE NECESSARY PEROXIDE OF HYDROGEN.

Read in the Section of Surgery and Anatomy, at the Forty-first Annual Meeting of the American Medical Association, held at Nashville, Tenn., May, 1890.

BY ROBERT T. MORRIS, M.D.,
OF NEW YORK.

Stop suppuration! That is the duty that is imposed upon us when we fail to prevent suppuration.

As the ferret hunts the rat, so does peroxide of hydrogen follow pus to its narrowest hiding place, and the pyogenic and other microörganisms are as dead as the rat that the ferret catches, when the peroxide is through with them. Peroxide of hydrogen H_2O_2 in the strong 15-volume solution is almost as harmless as water, and yet, according to the testimony of Gifford, it kills anthrax spores in a few minutes.

For preventing suppuration we have bichloride of mercury, hydronaphthol, carbolic acid, and many other antiseptics, but for stopping it abruptly and for sterilizing a suppurating wound we have only one antiseptic that is generally efficient so far as I know, and that is the strong peroxide of hydrogen. Therefore I have qualified it, not as "good," not as "useful," but as "necessary."

In abscess of the brain, where we could not thoroughly wash the pus out of tortuous canals without injuring the tissues, the H_2O_2, injected at a superficial point, will follow the pus, and throw it out, too, in a foaming mixture. It is best to inject a small quantity, wait until foaming ceases, and repeat injections until the last one fails to bubble. Then we know that the pus cavity is chemically clean, as far as live microbes are concerned.

In appendicitis, we can open the abscess, inject peroxide of hydrogen, and so thoroughly sterilize the pus cavity that we need not fear infection of the general peritoneal cavity if we wish to separate intestinal adhesions and remove the appendix vermiformis. Many a patient, who is now dead, could have been saved if peroxide of hydrogen had been thus used when he had appendicitis.

The single means at our disposal allows us to open the most extensive psoas abscess without dread of septic infection following.

In some cases of purulent conjunctivitis we can build a little wall of wax about the eye, destroy all pus with peroxide of hydrogen and cut the suppuration short. Give the patient ether if the H_2O_2 causes too much smarting. It is only in the eye, in the nose and in the urethra that peroxide of hydrogen will need to be preceded by cocaine (or ether) for the purpose of quieting the smarting, for it is elsewhere almost as bland as water.

It is possible to open a large abscess of the breast, wash it out with H_2O_2, and have recovery ensue under one antiseptic dressing, without the formation of another drop of pus.

Where cellular tissues are breaking down, and in old sinuses, we are obliged to make repeated applications of the H_2O_2 for many days, and in such cases I usually follow it with balsam of Peru, for balsam of Peru, either in fluid form or used with sterilized oakum, is a most prompt encourager of granulation.

If we apply H_2O_2 on a probang to diphtheritic membranes at intervals of a few moments, they swell up like whipped cream and come away easily, leaving a clean surface. The fluid can be snuffed up into the nose and will render a fetid ozæna odorless.

It is unnecessary for me to speak of further indications for its use, because wherever there is pus we should use peroxide of hydrogen. We are all familiar with the old law, "*Ubi pus, ibi evacua*," and I would change it to read, "*Ubi pus, ibi evacua, ibi hydrogenum peroxidum infunde.*" That is the rule. The exceptions which prove the rule are easily appreciated when we have them to deal with.

Peroxide of hydrogen is an unstable compound, and becomes weaker as oxygen is given off, but Marchand's 15-volume solution will retain active germicidal powers for many months, if kept tightly corked in a cold place. The price of this manufacturer's preparation is about 75 cents per lb., and it can be obtained from any large drug house

in this country. When using the H_2O_2 it should not be allowed to come into contact with metals if we wish to preserve its strength, as oxygen is then given off too rapidly.

H_2O_2 must be used with caution about the hair if the color of the hair is a matter of importance to the patient, for this drug, under an alias, is the golden hair bleach of the *nymph's dispare*, and a dark-haired man with a canary-colored moustache is a stirring object.

MEDICAL PROGRESS.

SUCCESSFUL REMOVAL OF A TUMOR IN THE BRAIN.—At a recent meeting of the Berlin Medical Society, Dr. H. Oppenheim described an operation of this kind. The patient was a woman æt. 36. She had enjoyed excellent health till last September, when she began to suffer from clonic spasms in the temporal region and in the left arm, and frequently fell into convulsions. On recovering consciousness she complained of pain in the right temporal region. The symptoms recurred, and a diminution of the sensibility of the left arm and side set in. The diagnosis pointed to a growth in the brain. As internal treatment only made the patient's condition worse, and the left foot also became rigid, the skull was opened on April 26, under antiseptic precautions, and the surgeons removed a tumor about the size of a crown piece. The patient has felt decidedly better since the operation. She can move the left arm and foot without difficulty, and can walk about.—*Lancet.*

THE FIRST ABDOMINAL NEPHRECTOMY IN CUBA.—The *Revista de Ciencias Médicas* publishes an account of the first operation for the extirpation of a kidney which has been performed in Cuba. The operator was DR. E. MENOCAL, of Havana, and the patient a young married lady who had had one child. She suffered from a tumor the size of the fœtal head, occupying the right hypochondriac and lumbar regions. In the lower part of it fluctuation could be made out. There was pus in the urine, and all the physical signs pointed to the existence of a diseased kidney. This it was decided to remove by means of an incision along the outer border of the external rectus, cutting through the peritoneum twice. There were adhesions between the diseased kidney and the peritoneum, and in separating them an abscess was opened which gave vent to a quantity of very fetid pus. The opening, however, was closed by means of bulldog forceps, and no further difficulty was met with. The pedicle and the ureter were ligatured with silk soaked in perchloride of mercury. The cavity was washed out with hot sterilized water. A silk suture in the form of a crown was applied between the edges of the posterior and anterior layers of the peritoneum, and two large drainage-tubes inserted, going to the bottom of the cavity, which was completely separated from the rest of the abdominal peritoneum. The external wound was sutured both deeply and superficially by metallic sutures, and an iodoform dressing put on. The bladder was washed out with a boracic acid solution. The whole operation occupied only twenty minutes. No serious complications occurred, and the wound was completely healed and the patient well in forty-six days. On examination, the tumor, which weighed about seven ounces, was found to contain eight abscesses, the cause of which was the blocking up of the ureter by an oxalate of lime calculus situated in the pelvis, and weighing twenty-four grains.

ARISTOL IN GYNECOLOGY.—DR. G. (*Gazette de Gynécologie*) confirms the results obtained by Swiecicki, Veiner, Rohier, and others, with the use of this drug in endometritis and ulceration of the cervix. Swiecicki employed the drug in a 10 per cent. solution in oil, into which tampons were dipped and placed in the vaginal vault; he also used suppositories of the drug introduced into the uterine cavity. With this method rapid results were achieved in ulcerations, endometritis and eczema of the vulva. Aristol is absolutely free from all irritating properties, neutral in reaction, free from odor, and seems to have much the same action upon ulcerations, and inflammed mucous surfaces as iodoform, only to a greater degree. In practical gynecology it may be employed in powder, carried to the part upon small tampons of cotton. In one case of epithelioma of the cervix it was employed with prompt relief of the hæmorrhage, disappearance of fetor and the part presented a clean granular surface. In endometritis, suppositories may be used containing 1 grain of the drug.

"One single point is to be especially observed if the best results are to be obtained in the use of this new product; it should never be conformed with iodo-thymol, and biniodide of thymol, the former of which it closely resembles. The last substance contains alkaline iodides that are irritating to wounds and mucous membranes."

SPECIFIC TREATMENT OF LOCOMOTOR ATAXIA.—The almost uniform failure of specific treatment in tabes, is a sufficient excuse for quoting a single authenticated successful result. GAUCHER (*La Semaine Médicale*) reported to the Societé de Dermatologie et Syphiligraphie, the case of a man æt. 27, who was infected with syphilis in 1876. Eruptions appeared upon the hands in 1880, and two years later, he had lancinating pains in the arms and legs, difficult locomotion, and diplopia. He was treated with sulphur

baths, douches and bromides, but without benefit. In 1883 he was markedly ataxic, presented plantar anæsthesia, loss of patella reflex, and walked with great difficulty. Inunctions of mercury were ordered with gram doses of potassium iodide thrice daily. The same week vision improved, locomotion was easier, and at the end of six weeks the patient was seemingly perfectly well. Since July, 1883, the patient has attended to his business, and there has been no signs of ataxia. Small doses of iodide of potassium have been given from time to time.

EFFECTS OF ALCOHOL UPON THE NERVOUS SYSTEM.—In the laboratory of PROF. MIERZEJEWSKI (*St. Petersburger Med. Wochenschr.*), dogs were fed upon 40 per cent. alcohol, the fluid being conveyed directly to the stomach through a tube, in the proportion of 1 ccm. for each kilogram of body weight—this dose was later increased to 6 to 8 ccm. The dosage was kept up until the death of the dog, which ordinarily took place in from five to six months, though one lived eight months. One dog, who had been poisoned with alcohol for some months, was killed in thirty-two hours by large doses; others were immediately killed by large doses—acute alcoholic poisoning. In the chronic poisoning was found general hyperæsthesia, paralysis of the legs and general muscular weakness. Post-mortem examination revealed congestion of the meninges of the cord and brain in the cases of acute poisoning. In the chronic cases, the grey matter of the cord and brain were distinctly hyperæmic. The nerve cells in the grey matter of the cord were degenerated, vacuolated, the protoplasm broken up into stringy masses. The granular matter had disappeared. The axis cylinder processes, as well as the nuclei, were obscured by the changes in the protoplasm. Leucocytes were sparingly found. The inflammatory process was most pronounced in the anterior horns. Medulla, pons and hemispheres presented similar changes in the grey substance, but not in so great a degree. The dog which was at first chronically poisoned for some months, and then killed by large doses in a few hours, presented the same changes as those chronically poisoned. The hyperæmia of the grey substance was more marked in the cases of acute poisoning, and showed a tendency to involve the white substance. In all cases, the process was an ascending one, and the lumbar and cervical portions of the cord were always the most affected.

AN OPERATION FOR ENTEROLITH.—S. CHALAFOW reported the removal of an enterolith before the Medizinskoje Obosrenije (*St. Petersburger Med. Wochenschr.*). The patient, a peasant woman 50 years of age, had suffered for the past twenty years from constipation, tympanites, vomiting, and pain, especially in the right hypogastrium. The attacks occurred at intervals of from three to six days. Fæcal vomiting was never observed. Upon examination, two tumors were found to the right of the umbilicus, separated by about 1 inch. They were hard, round, smooth and freely movable. Pain was felt at this point, both upon pressure and spontaneously. It could be determined that the tumors were not connected with the genital organs, but their exact nature could not be determined. A laparotomy was made, and the fæcal stones removed through an incision into the ascending colon. Silk sutures were used in closing the wound in the gut and abdominal wall. Sutures were removed at the end of eight days, and in three weeks the patient was discharged cured.

AN AMŒBA FOUND IN DYSENTERY AND ABSCESS OF THE LIVER.—DR. WILLIAM OSLER (*Centralblatt für Bakterol. und Parasitkde.*) says that Lösch, Koch and Kartulis have found an amœba-like organism in dysentery. Kartulis has made the further observation that in liver abscess accompanying dysentery amœbæ are found. So far as he knows these bodies have only been found in Russia and Egypt, so that the following observation has additional interest from the fact that they are also found in the New World.

The patient had lived in Panama for five years, where he had suffered from chronic dysentery. In May, 1889, he came North and subsequently went to Vienna, where he was treated for recurrent attacks of dysentery. In December he returned to Baltimore, where he was seen by Dr. Osler. For six weeks the patient suffered from slight chills, and sweats. On March 22, two abscesses in the right lobe of the liver were opened. The contained pus was white, of the consistence of cream, and in part stained with bile. Upon examination active amœba-like forms were found, having about twelve times the volume of a white blood corpuscle. They changed their form as rapidly as the liveliest swamp amœba. Their structure presented a homogeneous outer protoplasma, within this a granular substance in which small cells of different sizes were found, and an occasional nucleus. These amœbæ were also found in active movement in the fæces. The author thinks that the structure, movements, and general appearance of this organism leaves no doubt but that it belongs to the parasitic forms of the amœba.

TINCT. IODINE IN BRONCHOCELE.—DR. DAVIES (*Br. Med. Jour.*) says tinct. iodine in 5 minim doses, with hydrochloric acid and glycerine, answers well in simple glandular cases of bronchocele. This amount may require to be increased. When there is fibrous growth present, the injection of tinct. iodine is necessary, and Dr. Davies has never seen any serious results, if we exclude cases of cystic goitre.

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SATURDAY, AUGUST 9, 1890.

THE ENLARGEMENT OF THE ASSOCIATION.

It is essential to the well-being of this organization, if any measures shall be adopted with a view to the increase of its membership and the enlargement of its usefulness, that such measures shall not only be practicable in their operation, but manifestly beneficial in their results. Every suggestion which shall be made and every plan which shall be proposed, needs to be wisely and deliberately considered before decisive action is had. It is safe to presume that such deliberation will be assured since the views of several thousand of our members must be harmonized before any essential changes can be made.

We doubt if there be a single member of the Association who is actuated by a revolutionary spirit, or who would willingly dispense with any of our methods of procedure, so far as they are valuable, unless in their places better ones can be substituted.

There is a general conviction, and it has a strong hold upon our members, that in the past, as we were then conditioned, the present plan of organization was the best that could have been adopted. Under its guidance the Association has moved steadily on for more than forty years; but during these forty years surprising changes have come to us in all our surroundings. They are as apparent in matters pertaining to medical men and medical organizations as elsewhere. In view of these new conditions many of our most prominent and reliable members are led seriously to inquire whether the time is not at hand when some essential modification should be made in our plans of organization, which shall render the Association more surely the representative National Organization in this country. There are now within the American Commonwealth at least seventy thousand active medical practitioners, and the number of these which shall be in close affiliation must be largely increased if we are to maintain in fact, as in name, our prominence as the National Medical Association.

As to the methods by which a result so desirable can be attained, we do not propose by the urgency of our own convictions to forestall the wisdom of those who may be appointed in due time to formulate a report upon this important subject.

To those who are seriously considering what modification of our present plan can wisely be made, we commend a careful study of the constitution and by-laws of the Medical Society of the State of New York. The plan there adopted has been fully tested and meets with general approval, and with suitable modification, perhaps it could be adopted by the American Medical Association. The various State Medical Societies could be related to our central Association in some manner, as the Divisions are related to the State Society in New York.

Our local societies could be represented by delegates in the State Societies, and these in like manner in the National Association. The State Societies could labor efficiently for the perfection of local organization, and by a full representation of delegates greatly strengthen themselves and a union of such State Societies under one National Organization, would render it National indeed. If the American Medical Association can thus represent the aggregate of State and local societies, it will augment its membership by thousands, and can to a degree untold, increase its usefulness.

LEPROSY IN NEW BRUNSWICK.

There has been a lazaretto in northern New Brunswick since 1844. In July of that year it was opened on Sheldrake Island, in the mouth of the Miramichi river, having an area of thirty acres. The location was healthful and favorable to isolation, but the management of the lepers proved disagreeable to some of them, and they

would from time to time make their escape to the mainland by means of rafts and otherwise. The treatment was too much like that of prisoners, the building being surrounded by a high picket fence and the patients were locked in every night. Those who deserted were pursued, and when caught, were brought back by force. Some remained unfound in the woods on the mainland. In 1845, the lazar-house burned down, and it was suspected that the lepers set it on fire. In 1849, the unpopular island location was abandoned and a new lazaretto was built at Tracadie, about twenty miles further to the northward along the same coast. In 1851, the number of inmates was 37; the policy of the lofty fence was still in force and guards were employed to insure isolation. About 1849, DR. CHARLES LA BELLOIS was put in charge of the lepers, in order to enable him to test a proposed plan of treatment; he proclaimed quite confidentally the theory that leprosy is identical with syphilis, and therefore a curable disease. This episode resulted, of course, in failure.[1] In 1852, there was another fire, followed by a rebuilding the next year. Since the year 1868, the members of a sisterhood of nuns from the Hôtel Dieu of Montreal, have most unselfishly devoted themselves to the duty of nursing the sick lepers; a house adjoining the hospital has been built for them. The same medical officer, DR. A. C. SMITH, has been in charge since 1865. In 1880, the Dominion general government assumed control of the lepers, and an annual appropriation of $3,200 has been allowed, increased slightly during the present year. The lazaretto is of wood, having two stories, rather small and low. The females occupy the upper part, and the males the lower. The high fence has been abolished and the lepers are much less averse to entering the hospital than formerly. The inmates are free to move about in the eleven acres of grounds, belonging to the institution, in which some of them do gardening, while others fish in the river, and the patients are generally content with this retreat. They deem themselves much better cared for than their predecessors of the Sheldrake island institution. They have great confidence in their priest, FATHER BABINEAU, who takes an active, personal interest in their welfare. In 1844, the number of known cases was twenty. Prior to 1844, the number of cases known to have occurred and to have been fatal was twenty. No case is known to have existed earlier than 1815, when a French woman, URSULE LANDRÉ, became leprous. She was descended from grandparents who had immigrated from St. Malo, in Normandy, where leprosy is said to have long existed, but no leprous history could be attached to any of her progenitors, on either side. Ursule died in 1828; her husband and two sisters subsequently became lepers. The disease spread slowly, affecting the poorer members of a community that lived in a circumscribed district, and one almost inaccessible in those early days. The diseased unfortunates had little, if any, care or treatment, and were, for the most part, shunned by their neighbors. In some instances, the lepers were confined in a log-house or enclosure, constructed for the purpose, with an opening through the logs for food to be passed in to the dreaded person, or persons, until he, or they, became too weak to receive it, when, of course the end was not far off. Those who have suffered from the disease have been largely of French extraction, and at the present time all the cases are of that race. In times past, there have been occasional instances of the disease among Scotch, English and Irish people, but none among the Indians, so far as is known. That the disease is not increasing, but rather is diminishing, may be fairly concluded from the fact that during the past fifteen years the admissions to the Tracadie hospital have numbered only fifty-three cases, while in the fifteen years immediately preceding there were seventy-one admissions. From 1844 to 1888 there were admitted into the lazaretto 194 cases. Nearly all the victims to the disease ultimately betake themselves to the institution and die there; but some few have certainly died outside. Taking all these into an estimate of the entire number of cases from 1815 to date, it may be judged that there have been about 230 lepers in the seventy years and over, and that the number of cases has declined although the population has, meanwhile, surely multiplied threefold.

[1] From paper by Dr. Murray Maclaren, in the Maritime Medical News, May and July, 1890.

THE FRENCH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE will meet in Limoges, August 7. During the session a statue of Gay-Lussac will be unveiled.

FRESH AIR FUNDS FOR CITY CHILDREN.

One of the most striking features of the charitable work of the present day is in the care taken of the young, especially of our young city-dwellers. The little people who are so fortunate as to be brought up in the country have about the same care now that they have always had; that is, they look out for themselves, and they are generally able to do it. But our city infantry need a great deal of charitable oversight. The movement is well-nigh universal, in all great cities, to help poor children, subjected to city overcrowding, to get away into the country. In Berlin, an organization, known as the Vacation-Colonies Societies, is favored by Imperial ladies, and has achieved an astonishing success in a very short time. In Paris, there have been for several years small societies for taking the young out of the city in the summer time. London has had, for seven or more years, its Country Holiday Fund, which is a union of a number of formerly independent efforts for the relief of certain special areas. The number of children who obtained an outing, last year, from London, was twenty thousand, under the direction of thirty-six district committees, and distributing the children to not less than 450 country centres. The Fund expended $65,000 for that year. The majority of the children are placed in the country during the school vacation, which begins near the close of July and lasts only three weeks. The children go to cottages, for the most part, in small groups; and the same pilgrimage is made by the same children year after year in not a few instances. A cottage is seldom taken from the list. The advantages of this comprehensive system are many, not the least of which is the saving of time and money, and reducing the opportunities for imposition. Under the old private enterprises, designing persons took occasion to make use of two or more of the funds, and last winter, when for the first time an effort at organization was made in Boston, there were found to be over forty fresh-air charities, some of which were designed to cover the same relief-territory, and were liable to have their efforts misapplied. In New York City, as well as in some other seaboard cities, the enterprises are chiefly private charities, without any common aim or coördinated action, whose missions do not extend much beyond giving an outing at the seashore to the sickly children and their mothers, generally for a few days or a week at most. In addition to these are the single-day excursions by boat to some not very distant point, for the object of removing the children, whether sick or well, for a breath of fresh sea-air. These are all useful in their way, and help to keep down the midsummer death-rate.

EDITORIAL NOTES.

DEATH OF DR. WILLIAM BRODIE.—Dr. William Brodie, of Detroit, died at his residence in that city on July 30. Few men in the medical profession were more widely known than was Dr. Brodie. For more than a third of a century he had been an active member of the American Medical Association, and his loyalty to its interests was proverbial. Its highest honor was conferred when he was elected President. In the discharge of the duties in connection with that office, his services commanded universal approval. It is difficult for the moment, as the news of his death comes to us over the wires, to realize that in the future meetings of the Association, his place will be evermore vacant. His relations with the Association have been so inseparable, that the record of his life becomes a part of its history, and as time permits, other pens will do ample justice to his memory.

THE CONGRESS AT BERLIN.—As we go to press, this venerable body is in session. The distinguished representatives of medicine and surgery are there from every land. It is one of the marvels of the age that such a meeting is thus feasible. The ocean voyage is no longer a barrier, and the cable gives constant reports of its proceedings. A unison of purpose prevails in all that vast assemblage. Its deliberations concern and compass the globe. Medical men from every nation are met in common, and at their own expense, to consider the best means of promoting the health and happiness of the human race. The one great hinderance to perfect success in such a gathering as this is the absence of a common language for the expression of the common thought. It becomes a matter of exceeding interest, as to the manner in which this difficulty shall finally be overcome. What form or speech shall finally avail? Shall the Latin be revived? Shall one of the living languages prevail? Or shall a new language be created? Which?

DR. PAUL LOYE, æt. 29, died in Paris on July 5, of infectious pericarditis. During his too brief career he was attached to the laboratory of Paul Bert, and later to that of legal medicine under Brouardel. He was principally known from his studies upon decapitation—particularly his thesis for the doctorate, *La mort par la décapitation*, which attracted marked attention at the time of its publication.

PHILLIPPE RICORD MONUMENT. — *L'Union Médicale* publishes the first list of the subscriptions to the monument to Phillippe Ricord. The total amount was 8,220 francs.

PARIS PASTEUR INSTITUTE.—During the month of May, 146 persons were treated at the Pasteur Institute in Paris. Thirty-seven of these were bitten by animals in whom rabies was experimentally determined, ninety-one by animals whose condition was certified by a veterinarian, and eighteen bitten by animals suspected to be rabid.

KUSATSU, THE JAPANESE LEPER VILLAGE.—In the last number of the *Revue des deux Mondes*, M. Louis Bastide describes the Japanese leper village, Kusatsu. The waters of this resort are said to be especially beneficial in the treatment of leprosy. All the attendants, the proprietors and waiters at this resort are affected with the malady.

FRENCH STATISTICS.—In France the number of marriages in 1888 had fallen to 7.24 per 1,000 inhabitants. The average age of the women was 25 years, and of men 29 years and 9 months. The number of married men in the large cities is less than in the country. In Paris, 570 men out of each 1,000 are married, while in the country at large the proportion rises as high as 609.

Births were in the proportion of 23 to the 1,000 inhabitants, while in England the proportion rises as high as 32, and in Prussia to 48. Births are less numerous in the large cities, the department of the Seine (Paris) gave ten births to each 100 women between the ages of 15 and 45, while in the whole of France the figure reaches 12 to 13. Twenty-eight per cent. of all births in Paris are illegitimate, while for the whole country the percentage falls to 8.

A NEW CONGRESS.—A Congress of Microscopists will convene in Detroit on August 14, and continue four days. "The Influence of Electricity upon Protoplasm," will be the subject of the opening address. Prof. Marshall D. Ewell, of Chicago, will present some of the medico-legal questions involved in the Cronin case.

ONTARIO MEDICAL SOCIETY.—The tenth annual meeting of the Association was held at Toronto, Dr. J. A. Temple, of Toronto, President. About two hundred and fifty members were present. It was one of the largest and most successful meetings yet held. The president's address contained a strong plea for a uniform license for the Dominion.

CHOLERA.—We have no reports of cholera in Russia or Upper Mesopotamia, and it is not advancing north or east of Massoul. The favorable period for its development in the cities of the Euphrates is later in the season, and an outbreak may be anticipated at any time. The same may be said of Persia, where cholera has not prevailed since 1873.

MEDICAL DEPARTMENT OF YALE COLLEGE.—We are glad to note that an effort will be made to endow this valuable medical school, and thus enable it to maintain its place in the front ranks of our medical institutions. The alumni of Yale College and the medical profession of Connecticut should make this endowment a fixed fact. They cannot do a better thing.

THE PETER-PAUL HOSPITAL, of St. Petersburg, has been given 50,000 rubles to erect barracks for the treatment of acute diseases.

A VISIT POSTPONED.—It had been very generally announced that Sir Morell Mackenzie would visit America and lecture in some of our principal cities during the month of October next. It is now reported that, by reason of ill health, he is obliged to cancel his engagements, and defer his visit until some later date.

THE EFFECTS OF EXTREME TEMPERATURES.—It will be a matter of interest to note the effects of the extreme temperatures now so general in this country, upon the general health. It is especially desirable to observe their influences upon the diseases of children. We have the conviction that during the present heated term a far less number of cases of sunstroke have been reported than usual. Is it possible that an unusual dryness in the atmosphere has conduced to this result?

TOPICS OF THE WEEK.

THE HIGHER MEDICINE.

De Quincey complains, in a passage in his autobiography, that "we English are haters and revilers of ourselves beyond all precedent, disparagers of our own eminent advantages beyond all sufferance of honor or good sense, and daily playing into the hands of our enemies." If this be true of educated Englishmen in general, it has a particular application to our own method of disparaging the art of medicine, especially in comparison with that of surgery, and nothing is more frequent amongst us than the complaint that medicine seems to lag behind whilst the physical sciences stride majestically forward. This disparaging attitude towards medicine arises partly from ignorance of the true province and nature of medical science, and partly from the universal practice amongst mankind of depreciating the things in which they excel. It is always the learned men who affect to despise letters, and the wealthy who speak disrespectfully of money. These can afford to do so. But an imperfect appreciation of the true nature of the physician's art is, we suspect, at the bottom of most of the reflections cast upon it. Sound judgment, combined with a high order of manual dexterity, will make an excellent surgeon; but a great physician needs almost the mental equipment of a great poet. What Emerson said of the poet is applicable in its degree to the true physician:

"As the eyes of Lynceus were said to see through the earth, so the poet turns the world to glass, and shows us all things in their right series and procession. For through that better perception, he stands one step nearer to things, and sees the flowing or metamorphosis. . . . The poet alone knows astronomy, chemistry, vegetation, and animation, for he does not stop at these facts, but employs them as signs."—EMERSON: *The Poet.*

It is not enough for the physician to know anatomy, physiology, chemistry, and pharmacology; he must not stop at knowing these, but must put them into the alembic of his brain, and transmute them into medical science. Professor Huxley said the other day that it would be simply manslaughter for a doctor to treat his patients on the raw and undigested principles of physiology. Medicine must, therefore, never be looked upon as a mere science, because it is much more than that; it is wisdom sublimated from many sciences; and this is why the Gulls, the Jenners, and the Clarks can never be as common as the mere scientists who work by rule and scale. When Coleridge was accused of plagiarising in his *Hymn to Chamouni*, from the poem of Frederica Brun on the same subject, it was easily explained that though he had taken her frame work and used certain of her ideas, he had done so simply to glorify and endow them with life. With her they were dead phrases; Coleridge created the *Hymn to Chamouni* out of them. Just in proportion as the physician can create diagnosis and treatment for the cases which come before him as living and as various as the patients which are the subjects of the different diseases, just by so much is he a true physician. The inferior mind may see the same things as the superior, but the latter alone "sees their flowing and metamorphosis." This is why patients would go and talk to Sir William Gull and derive benefit from the conversation, though they came away with no prescription, and took no drugs from his hands. The vulgar mind cannot understand the reason of this, and the hard scientist smiles a little superiorly at the idea.

We have been led into this train of reflection by reading Mr. Guy Beddoes' interesting work, *Habit and Health*. It is a selection from the works of the wisest physicians of modern times, and, within the compass of 350 pages, there is enshrined a medical philosophy which is the essence of the best teaching on health of body and mind. Nothing could better answer the objection that medical science has not kept pace with other branches of human knowledge than a perusal of its deeply instructive pages.

A medical writer recently stated that in some departments our art "had done nothing but retrograde for a thousand years, and in the last fifty years we have done little but pick up the clues which were lost when the Alexandrian library was burned." Yet the men of the past were not such fools as we are too apt to consider them; and as we read the wise advice of such men as Hunter, Wilson Philip, Paris, Abernethy, and Johnson, we are constrained to admire their insight and the breadth of their mental vision—if only because they have shown us how much lies within our own power in the maintenance of health. Such men speak with the authority of genius, and not as the scribes who lack such insight; and their genius is shown by their faith in the power of Nature to cure diseases, and the caution with which they estimate the power of medicines to do so. The true physician endeavors to learn the secrets of Nature by reverently questioning her, and Mr. Guy Beddoes has filled his pages with the answers which never fail that patient and respectful attitude. That we have in modern times learned this much at least is the earnest of our future advance. Sir Andrew Clark has pointed out the aid which physiology has rendered to the physician in a hundred ways—notably in respect to the influence of our modern undue work and worry in depriving the stomach of its rightful share of nerve force, and so causing it to fail in its duty. Dr. Andrew Combe, by application of the principles of physiology, showed how mental stimulus influences muscular action, and indicated the influence which the higher feelings, after they have the ascendency, exert in promoting the general health. He has explained how the lower feelings, when unrestrained, how the mind oppressed with grief, anxiety or remorse, have a direct tendency to produce bad health. We believed all this before on the authority of philosophers and theologians. The physiological physician gives us scientific reasons for our faith. But he goes further. As we are not all intellect, we must not concentrate our vital action in the brain, or we shall deprive the stomach and other organs of their requisite nervous stimulus. Literary men, by a disregard of this axiom of the physiological physician, often become hypochondriacal dyspeptics, and blame the art of medicine for not curing by drugs what is the outcome of their own violence to physiology. As we turn the pages of this book, we meet, in

a score of pregnant passages, the warnings of wise physicians against the lives of "wear and tear" led by so many, Englishmen especially, the restless activity of mind ever directed to one end, and that not the highest. Physiology has pointed the moral, and doctors have preached the gospel of, serenity, but too often they have been as voices crying in the wilderness, for no man regardeth them, and the reproach of the almost certain result of the disregard of their teaching is laid at the door of medicine. The "terrible cost of nerve tissue," as George Henry Lewes aptly said, is disregarded even by the wisest of us; when intellectual activity is accompanied by agitating emotion it is ruinous. "Our passions are destroying flames." This is sound teaching, and doctors have endorsed it. The evil influence of anxiety on digestion alone is well ascertained; but as we cannot counteract it by drugs, we are often reproached for incompetence. The whole teaching of modern medicine is in the direction of a better regulated mode of life, prevention rather than cure, or if cured rather by a reconciliation with offended Nature than a warfare with disease by medicines.—Editorial, *British Medical Journal.*

THE PATHOGENESIS OF YELLOW FEVER.

Drs. Finlay and Delgado, who have for some time been engaged in investigating the bacteriology and pathology of yellow fever in Cuba, recently read a paper on the subject before the Havana Academy of Sciences, in which they detailed their experiments and discussed their significance, with special reference to the researches of Dr. Sternberg, who a short time ago paid a lengthened visit to the island for the purpose of studying the subject. They say that Sternberg's micrococcus Finlayensis has been found by Dr. Kinyoun on the skin of patients suffering from malarial fever, in localities where yellow fever does not occur, and that it is therefore impossible that this microörganism can bear any relation whatever to the causation of yellow fever. The micrococcus tetragenus versatilis has been found in the serous fluid of blisters on yellow fever patients, in spite of the most careful disinfection of the skin, in one-half of the cases examined, and in three-eighths of the specimens on which observations were made. This micrococcus was found in the blister serum of persons resident in Havana, and acclimatized, in two out of seven cases examined, and in three-thirteenths of the specimens taken, but only in cases where the disinfection of the skin had been omitted, or in which it had been but imperfectly performed. Nothing of the sort was found in any of the eight specimens taken from four persons whose skin had been as thoroughly disinfected as in the case of the yellow fever patients.—*Lancet.*

SHALL CONSUMPTIVES MARRY?

While in many ways the human race is progressing, and while the world is more temperate and charitable than in ages past, yet in many things we are really retrograding. Particularly is this the case in regard to the importance of raising healthy children.

The Spartan woman's business was to be the mother of brave and robust children. This was one of the principal points observed by Plato in his "Philosophical Republic." He proposed that the most excellent among the men should be joined in marriage to the most excellent among the women; and the inferior citizens matched with the inferior females; and that the offspring of the first should be brought up and the offspring of the others should not. Yet to-day the great majority of marriages are made without any thought or idea of the character or vigor of the offspring that are to result therefrom.

Recently, the State Board of Health, perceiving the contagious nature of tuberculosis, have requested all Superior Judges, before sentencing a prisoner to the State Penitentiary, to have him examined by the County Physician, in order that special measures may be taken to prevent the contraction of this disease by other criminals. This movement we all applaud. But if the lives and health of these malefactors are so important, are not the lives of those who do not belong to the criminal classes important? Why should not the State adopt some means to prevent the marriage of individuals who have diseases that would be likely to be perpetuated in their offspring? There is not a physician before me to-day but knows of marriages that he realized were unwise at the time they were made, and that resulted in children who were born to suffering, sickness and early death.

Now, what remedy can we offer for this terrible state of affairs, which is said to be undermining the strength of the people of California? If the county physician can examine every criminal before he is sent to the Penitentiary, why should not every man and woman who desire a license for marriage be required, before a license is issued, to show the County Clerk a certificate from the county physician, certifying that both he and she were free from any taint of consumption, gonorrhœa, syphilis or scrofula?

I ask you, gentlemen, to give this subject, which seems to me a very important one, your serious consideration.

[From President's Annual Address to the Medical Society of the State of California. By Walter Lindley, M.D.]

FRANCE AND FOREIGN MEDICAL MEN.

If the committee on the Medical Profession Bill in France is to have its way, foreign diplomas, of whatever country, are likely to be met with slight respect. The committee proposes that no medical man holding a foreign diploma, shall be allowed to practice in France unless he has received the degree of Doctor of Medicine from a French faculty, after having passed the required examinations. In certain cases, however, the Minister of Public Instruction may grant an exemption from some of the examinations. Foreign medical students are to be subjected to the same rules as Freneh students. No person is to be allowed to practice as a dentist unless he has a diploma of doctor, or has obtained a special diploma as dentist, issued by the government, after examination and a preliminary course of study. Such suggestions give a poor opinion of the progress of truly liberal feeling in France. As they affect England we can only regret them, and hope they will still not become a law. The numerous people of British nationality in France, and the state of our medical education, tend to stamp such proposals as alike harsh and unreasonable.—*Lancet.*

PRACTICAL NOTES.

TREATMENT OF DYSENTERY BY ENEMATA OF CORROSIVE SUBLIMATE, ETC.

It is now generally recognized that certain morbid conditions of the intestinal tract may be favorably modified by various drugs belonging to the class of antiseptics, among which the chief are calomel, bismuth, naphthalin, and thymol. It is a noteworthy fact that these substances are insoluble, and it is in virtue of this property that they are enabled to run the gauntlet of the absorbents and exert their specific action upon the intestinal contents. The best of all antiseptics, corrosive sublimate, has thus far been of little use for the purpose mentioned, because it was supposed that no benefit could be exerted by any but a lethal dose. While this may be true of its administration *per os*, it is shown by G. Lemoine (*Bull. gen. de Thera.*, January, 1890) to be a mistake so far as concerns administration *per rectum*.

Lemoine has treated fifty-four cases of dysentery by enemata of corrosive sublimate, and with the happiest results. The strength of the solution was one to five thousand, of which two hundred grams were administered three times a day; later, two hundred grams of a solution of one to three thousand were injected twice daily. Improvement showed itself, as a rule, after the first injection, the first symptoms to disappear being the tormina and tenesmus. In a certain number of cases the tenesmus was so great that the enema could not be administered without a preliminary treatment, which consisted in painting the sphincter with a five per cent. solution of cocaine.

In acute cases a cure resulted from this treatment in from three to four days; whereas, in the more chronic cases which presented themselves for treatment on account of an acute exacerbation, a cure was effected, as a rule, in one day. The latter statement is somewhat startling in view of the well-known fact that chronic dysentery is decidedly rebellious to all the usual modes of treatment.—*Med. News.*

CACTUS GRANDIFLORUS IN HEART DISEASE.

Dr. Orlando Jones publishes his experience of cactus grandiflorus, which he claims is likely to prove a useful adjunct to our resources, especially in asthenic conditions of the heart. Digitalis, strophanthus, and convallaria are not always reliable in the varied conditions of the heart with which we daily meet. The action of digitalis is not infrequently disappointing when we are dealing with a feeble heart, especially if that feebleness is excessive and of long duration. In such instances cactus grandiflorus may fill a gap where other remedies appear to be lacking. The action of this remedy seems to be the very opposite of that of digitalis, that is, in the final stage it strengthens the heart.—*Brit. Med. Jour.*

EFFECTS OF CAFFEINE.

In an able article on the study of caffeine, Dr. Edward T. Reichert reached the following conclusions:

1. The pulse rate may be diminished during the first and last stages of the poisoning, but it is generally decidedly increased. During the first stage the diminution is due to stimulation of the cardio-inhibitory centres in the medulla oblongata and heart, and during the last stage to a direct depression of the heart. The increase in the pulse rate is due to a depression or paralysis of the above mentioned cardio-inhibitory centers.

2. Arterial pressure during the first stages of poisoning is generally either unaffected or diminished, but occasionally a trifling increase is noted; during subsequent stages it is diminished. The increase is due to a direct stimulant action upon the blood vessel walls, increasing vascular tension. The diminution is due chiefly to a direct depression of the heart, and to some extent, doubtless, to a secondary paralysant action on the vessel walls.

3. The acceleration of the heart-beats may be accompanied by no appreciable alteration in blood-pressure, but generally by a more or less decided diminution, which is dependent upon cardiac depression.

4. Caffeine diminishes the heart's efficiency for work, arrests it in diastole, sometimes induces sudden paralysis, and is, therefore, a cardiac depressant.

5. The asserted stimulant action upon the circulation is, doubtless, subjective, and dependent upon an excitation of the cerebral centers.—*Medical News.*

CHLORALAMID.

Chloralamid is a combination of chloral and formamide. It comes in colorless crystals, having a bitter taste, being soluble in ten parts cold water and in one part alcohol. It is more freely soluble in warm water under 140° F. Excess of temperature causes separation of the ingredients.

It may be given in wine, water or capsule.

The dose is from twenty to forty grains.

It produces sleep in twenty-five to thirty minutes. The sleep lasts from six to eight hours.

The indications for its use are:

Nervous excitement.

Neurasthenia.

Insomnia in heart or lung disease.

It does not act where the insomnia is accompanied by severe pain or mental disturbance.—*Therapeutic Gazette.*

SOCIETY PROCEEDINGS.

British Medical Association.

Annual Meeting held at Birmingham, Eng., July 1, 1890.

DR. THOMAS MORE MADDEN, of Dublin, read a paper in the Section of Diseases of Children, on

PHYSICAL EDUCATION IN RELATION TO MENTAL DEVELOPMENT IN SCHOOL-LIFE.

The following is an abstract:

The respective claims of physical and mental training, and the evils arising from the neglect or abuse of either are obviously questions of the highest medical as well as social interest. This neglect now presents itself in two different aspects. On the one hand, the children of the poor in England are compulsorily subjected at an absurdly early age to a forcing and injurious system of mental cultivation. Whilst on the other hand, in the case of those of a better social position, the physical powers are not uncommonly overtrained at the expense of the mental faculties. Of these errors, the former is the most important, and to its operation is, I believe, largely ascribable the apparent diminution of physical stamina observable in too many of the youth of the present day as compared with the physically more robust, if intellectually less cultured generation of the pre-educational period. Looking at the overtasked and anæmic little children now chained to the desk by the School Boards, we might be tempted to believe

> "'Twas not the sires of such as these
> Who dared the elements and pathless seas;
> But beings of another mould—
> Rough, hardy, vigorous, manly, bold!"

At the present time, a large part of the first ten years of life, which should be primarily devoted to physical and moral training, is given up to the development of the mental powers: the child, when a mere infant, being compelled to attend some school, where the immature brain is forced into abnormal and disastrous activity. On its return home, jaded in mind and body, to prepare for next day's task, such a child is necessarily unfit for the enjoyment of the physical exercise which is essential for its bodily development and health, or for the still more important elementary training of the affections and moral faculties and instilments of religious principles, which are better acquirable from home teachings than from any School Board system. We are all of course agreed as to the duty of properly educating children so as to fit them mentally and bodily for the increasing requirements and competition of modern life. But as to the extent to which the former should be carried and the latter neglected in early childhood, there is unfortunately a great discrepancy between the rulers of the Education Department and the views of those who have to deal in disease with the consequences of the violation of the laws of nature. And hence, whilst little children are thereby overworked into disease or death, the physician must still raise his protesting voice, albeit it would apparently seem unheeded.

During the first eight or ten years of child-life, the amount of mental cultivation which a child's brain is capable of receiving with permanent advantages is much less than is commonly believed. No greater physiological mistake is possible than that of attempting any considerable degree of such culture until the sufficient development of the physical stamina and moral faculties is accomplished. The organ of the mind is as much a part of the body as the hand, and ere either can function properly, its vital force must be fostered and maintained by nutrition and developed by physical exercise. A large proportion of those who come within the provisions of the Elementary Education code are semi-starved children of the poorest class who, when thus debilitated by privation, are necessarily as much incapacitated for any mental strain as for the accomplishment of any herculean feat of physical strength; it being not less inhuman, injudicious, and impolitic to expect the former than it would be the latter from those so circumstanced.

If the State, for reasons of public policy, determines that all children shall be compulsorily educated from their earliest years, it should certainly afford the means by which this may be least injuriously and most effectually carried out, by providing food and physical training as well as mental education for every pauper child attending an Elementary school.

Amongst the results of overpressure in such schools under the Boards referred to, are brain diseases in all forms—viz., cephalitis, cerebritis, and meningitis, as well as headache, sleeplessness, neuroses of every kind, and other evidences of cerebro-nervous disorders. On no other ground can the increasing prevalence of these affections amongst the little victims of the Educational Department be accounted for or explained, than by ascribing them to the new factors "brain excitement" and "overpressure," which in the case of young children are now too commonly disastrously associated with the process of mis-directed education and neglected physical training.

In connection with the physical management of childhood, I may add a few words on the abuse of alcoholic stimulants. The evils resulting from the abuse of alcohol were never so prevalent as at present, and are traceable in the diseases of youth as well as in those or adult existence. The results of this acquired or inherited alcoholism are brought under clinical observation in the form of cerebral gastric and hepatic disorders, and especially cirrhosis of the liver, which as well as

the protean forms of cerebro-spinal diseases, and the various neuroses so frequently noticed in hospitals for children, and to which I have elsewhere directed attention. In the majority of these cases of juvenile alcoholism that have come under my care in the Children's Hospital, Dublin, this tendency appears inherited and most marked in those whose mothers were inebriates—intemperance in women also bearing in other ways on the diseases treated in hospitals for children, where its effects are strikingly evinced by the moral and physical deterioration of the offspring of the drunken, and by their special predisposition to strumous, tubercular, and other constitutional taints.

Under no circumstances should alcoholic stimulants be given to children, save in the guise and defined doses of other remedial agents—my experience in hospital and private practice, at home and abroad, having amply confirmed the view expressed in a work of mine published many years since, viz., that it is physiologically wrong, as well as morally unjustifiable, ever to allow a healthy child to taste alcohol in any form.

DR. MADDEN also read a paper in the Obstetric Section on

OVARIAN HERNIÆ; THEIR CAUSES, SYMPTOMS AND TREATMENT.

Ovarian herniæ are amongst the most neglected, although clinically they should be included amongst the most important, of the troubles that come before us in gynecological practice. In the great majority of cases they occur downwards into Douglas' space, and in such instances the left ovary is that most frequently displaced. The next in point of frequency of these herniæ, are those occurring in the inguinal regions where they are either found above Poupart's ligament, or is more commonly the case, follow the course of the canal of Nuck downwards and forwards, and so present in the labia where they may be readily recognized. In the former or directly downward variety of displacement, the ovary may be discovered on vaginal examination in the recto vaginal fossa as a small, oval-shaped, firm, elastic and highly sensitive tumor, bulging forward into the post-cervical *cul de sac*. In the larger number of cases ovarian herniæ, especially those in Douglas' space, result from the *vis a tergo* of abdominal or uterine tumors, or from the tension on the appendages occasioned by displacements of the uterus.

Diagnosis.—Until recently these herniæ when inguinal were very generally compounded with enlarged glands; when labial with other tumors in that situation; and when downwards with pelvic abscess, and hæmatocele. Or as often happens, they are mistaken for the retroflexed fundus uteri, and the patient suffering from an ovarian prolapse is vainly treated for a non-existent retroflexion or retroversion of the uterus. There can now be no excuse for such errors. The sudden occurrence of the tumor, its physical character, the peculiar dull sickening pain, and the extreme tenderness and nausea manifest on examination, are sufficient to enable a correct diagnosis to be made by any competent gynecologist.

Treatment.—Where the ovarian herniæ takes place through either of the abdominal rings or downwards into Douglas' space, it may in some instances be reduced, as any other herniæ similar situated. In the majority of cases, however, such herniæ are irreducible when discovered, and must either be supported in the former case by applying a hollow truss, whilst in the latter case the prolapsed ovary must be replaced if possible, and kept in position with a peculiar form of pessary exhibited, specially devised by Dr. More Madden for the purpose, or failing this, if the symptoms be urgent the ovary must in some cases be removed.

The foregoing views are illustrated in the paper of which this is in an abstract by the details of several instances of ovarian herniæ, exemplifying the clinical history and treatment of such cases.

Allegheny County Medical Society.

Special Meeting, June 17, 1890.

J. A. LIPPINCOTT, M.D., PRESIDENT PRO TEM., IN THE CHAIR.

CASE OF SUSPECTED VOLVULUS.

DR. BATTEN reported: On Sunday, June 8, I saw a man who had been suffering for several days with intense abdominal pains. There was sickness at the stomach. I gave him a quarter of a grain morphia sulphate and extract of belladonna every hour. That did not control the pain, and Dr. Pollock was called in consultation. We continued with the belladonna and the sulphate of morphia every hour, and a hypopermic injection of morphia every six hours. This quieted him. The morphia and belladonna were continued steadily, and when the pains became unbearable, morphia was injected. He continued in that way with vomiting, until Friday. I omitted to say we injected warm water into the bowels. On Friday afternoon there was a passage of the bowels and we omitted the hypodermic injection and the morphia and belladonna, and gave him Rochelle salts in small doses. Yesterday he had three hours sleep. Last night he slept all night. To-day he is well.

DR. BUCHANAN: I would like to know if any tumor could be felt?

DR. BATTEN: No, but the abdomen was very hard.

DR. LANGE: I would submit that Dr. Batten

has given no evidence of intussusception; it might have been a case of ileus, a case of fecal obstruction or of typhlitis; Dr. Batten has given no evidence of volvulus.

DR. BATTEN: It was an obstruction of the bowels. No hard matter came away after the bowels commenced to move.

DR. HUSELTON: I would be disposed to criticise the treatment. I cannot readily understand why he should resort to purgatives in such a case. Of course the opiates would be all right to allay pain and quiet the bowels. It seems to me that purgatives would hardly be proper in such cases.

CASE OF PUERPERAL CONVULSIONS.

DR. DUFF: About one year ago, I reported a case of puerperal convulsions to this society. I was called to see a young woman of twenty, about two weeks before the time of labor. I found general anasarca as well as urine loaded with albumen, and I treated her, as I indicated in my report, by giving her digitalis. About six days after, I was called to see her. She was taken in convulsions, which could only be controlled by chloroform. These we controlled for about twenty four hours when they returned. I then dilated and delivered her of a male child. The child lived about a week. The mother made a good recovery and did not have convulsions after delivery. Against my orders she cohabitated with her husband and became pregnant within three months. Before pregnancy her urine was normal. At four months I examined her and found considerable albumen. I then put her upon nitroglycerine, one drop doses three times a day with the result that the albuminuria disappeared. At six months the albumen returned, as well as the dropsical condition. She was again put on nitroglycerine, and there remained a slight trace of albumen during her whole pregnancy. She was confined last Tuesday morning; I applied the forceps, delivered her, and she has made an excellent recovery. I might follow this case with another almost similar in history, in which nitroglycerine was used with as good results; but in a third case it did no good. Taking it all in all, however, my experience is that nitroglycerine is one of the best remedies we can use in these circumstances.

DR. CONNELL: Two such cases came under my notice. One showed about ten per cent. albumen; this was at the beginning of the seventh month. In about two weeks I was called to see her in convulsions. In another case was one in which I was called by Dr. Hallock. In this case there was no albumen in the urine. The woman had reached full term and the labor progressed slowly, but favorably; being first labor, of course it was a little tedious. During the second stage, she was seized with a terrific convulsion; during the time we were delivering her, which we did as quickly as possible, she had three or four convulsions. There was no trace of albumen in her urine.

DR. STEWART: Albuminuria, uræmia and convulsions during pregnancy are invariably ascribed to circulation interferences by pressure of the enlarged uterus. But it is worthy of note that abdominal tumors as large as uterus at term, and occupying the same situation, do not entail these results. How can this be explained? It is to be remembered that pregnancy possesses other means to effect convulsions, namely, through the nervous system. In addition, discrimination is necessary, and all convulsions occurring during pregnancy, labor, and the lying in, are by no means to be ascribed to, and treated as the result of uræmia.

DR. GREEN: April 28th last, I was summoned to see a child six years of age, with typhoid fever. The patient remained ill with the characteristic temperature curves during twenty days. During the last six days cerebral symptoms seemed to predominate, and about the time the fever subsided and the temperature became normal, the child seemed to convalesce rapidly, and seemed cheerful. On the twenty-second day, when I called they told me the child had not spoken during the past night, and had spoken but once since I made my visit the day before. She continued in this mute condition for six days without uttering an audible note. During this time there did not seem to be any unusual delirium, but about twenty-four hours before she began to speak she manifested considerable delirium of rather a cheerful nature. It was on the seventh day she began again to speak, and within forty eight hours she talked again as usual. I think this case is unusual. The child made a good recovery, and is now apparently as well as before the illness.

DR. BUCHANAN: I have seen a case very similar to Dr. Green's. A child seven years old was attacked by typhoid fever, and passed through a typical course of fever lasting four weeks. The child was then unable to speak. It had no other cerebral symptoms whatever. In all other respects the case was an ordinary one. It returned to speech more gradually than Dr. Green's case, but finally completely recovered. I think it was almost a week from the time it began to say individual words until it was able to express its wants.

DR. HUSELTON: I have to report a case of dislocation of the hip-joint. The dislocation was that which is commonly known as the dorsal dislocation. The case had been seen and manipulated by another surgeon, and in the manipulation the head of the bone had slipped into the thyroid foramen, an accident which may happen to any one of us, and which is not so readily reduced. On my third effort I succeeded in dislodging the bone, and it returned to its place

with a snap so loud that I felt certain I had fractured the neck, but was glad to find that I had not. This is the third case of dislocation of the hip I have reduced by manipulation. The first one I had no difficulty with whatever. The second one I also succeeded in reducing without special effort. The patient made a quick recovery in this last case.

DR. MCCANN: This is not an uncommon accident in attempting to reduce a dislocation of the hip-joint; in the effort to place the head of the bone in its normal position, unless there be extreme care exercised, it will be thrown into one of the other dislocations. Some years ago a man was struck on the back by a railway train, and sustained a dislocation of the hip, as well as other injuries. When he was brought into the hospital it was not appreciated that he was fatally injured, and an effort was made to reduce the dislocation. The effort most signally failed for a long time; finally the bone slipped into position just as the man was dying.

A post-mortem showed that not alone the fibro cartilage around the periphery of the acetabulum, but a bony section at the superior edge also was fractured off. The specimen was not retained. It would have been of value. A few years ago a child of 10 years was subjected to several efforts at reduction of the dislocation by manipulation. The head of the bone could be thrown into the thyroid foramen, and was apparently reduced, but as soon as the extension was removed there was an immediate reproduction of the dislocation, although a deformity did not exist. After two or three surgeons had made a number of efforts to reduce the dislocation by manipulation, the child was put in bed with extension by a splint, and eventually recovered. I am satisfied that this case—although, fortunately for the child, we had no opportunity to verify the opinion, for she lived—was also a case in which the cartilage, and perhaps some bone had been torn off.

Occasionally, as has been demonstrated by Dr. Murdoch, dislocation which cannot be reduced by the ordinary manipulations will be reduced by a little traction. I remember one in which I was able, by my own unaided effort, catching the foot and pulling powerfully upon the limb, to replace the head of the bone in the socket.

DR. PETTIT: Two cases I saw in the hospital which were reduced by extension. One had been worked with a long time by a half-dozen physicians and attendants, and there was failure to reduce the dislocation. While they were rigging up the rope and pully arrangement to try, some one grasped the man by the limb, and by no great force, but simply by steady pulling for may be three-fourths of a minute, the bone slipped into place. Since that time I have seen one other case reduced in the same manner after quite a good deal of manipulation without success, by extension without a great deal of force, but the force being kept up some minutes steadily.

DR. BUCHANAN: I recall a case in which efforts were made to reduce a dislocation of the hip in a railroad man, by, I suppose, five or six competent surgeons, and when they were through, the reduction was unaccomplished, and the opinion was expressed that it must be a fracture of the rim of the acetabulum neck, and that it was impossible to reduce it. Dr. LeMoyne requested to be permitted to put on an extension, and by extension and some little manipulation, not the ordinary manipulation, but manipulation during extension, he reduced this hip-joint. This man was on the point of being returned to bed with his luxation unreduced when the successful attempt was made.

DR. BATTEN: I had a case of dislocation of the hip, and could not reduce it. Dr. Emmerling, Dr. Dickson and Dr. Reiter were present. The bone went into place with a snap under Dr. Reiter's manipulation.

DR. KŒNIG: I would like to ask if it might not be possible that the position of the rent in the capsule has much to do with the return of the bone; where the surgeon is not able to return the bone by the method of manipulation, and where the method of extension is readily followed by reduction of the bone, is not the location of the rent a factor in the case?

DR. MCCANN: What I wish to say is, that in the cases of extension, the patient being entirely under the influence of an anæsthetic, completely relaxed, the amount of force used was not great. In my own cases I did not exert a very great force, and it slipped in.

Another method consists in etherizing the patient, laying him on his abdomen on a table, and allowing the limb to hang down over the end of the table. The result is that after a certain length of time the muscles of the abdomen relax, and with almost no manipulation the head of the bone is thrown into its proper position.

DR. HUSELTON: A farmer sustained a simple dislocation of the shoulder. He was taken into the town of Harmony, where two surgeons tried to reduce the dislocation. They failed, and had the man loaded into a spring wagon and sent to my office, with a note asking me to call in some of my friends and attempt to reduce the dislocation, and in the event of a failure, to send him to the West Penn. Hospital. I said I would make an attempt to reduce it myself. I took the patient into my back office, laid him upon the lounge, and standing behind him, I pulled and told him to pull, which he did, and I think the dislocation was reduced in about two minutes. Now these were competent men who failed with this case, and they seemed to have exhausted every effort. Therefore I think we should be very charitable

indeed before we condemn a physician for failure to reduce a dislocation.

THREE CASES OF FATAL PERICARDITIS, WITH AUTOPSIES IN TWO.

DR. LANGE: I wish to report three fatal cases of pericarditis. The first was a large German, previously healthy, with no discoverable hereditary taint except that his mother had died of lung disease at the age of 32. This man was a cooper by occupation, and boasted of his previous excellent health. He presented on examination the usual signs of pericarditis except that of pain. He presented in addition the ordinary signs and symptoms of a slight fever. Pericarditis was suspected in this case, and during the next three weeks under observation it was ascertained to exist. This man died of heart failure on the water-closet. The autopsy showed the heart to be the so-called hairy heart. There were numerous and strong adhesions between the parietal and visceral layers. Other lesions consisting of organized bands from the visceral to the parietal pericardium of from ¼ to 1 inch in length, and as strong as the chordæ tendinæ. These must have exerted a potent and pernicious influence upon the contraction and rotation of the organ. Still other bands were free at one extremity, which floated in the very limited amount of effusion. This was a tubercular pericarditis, and nowhere else throughout the body was tubercle discovered.

The second case occurred in an Italian æt. 35, who had a left-sided, lower-lobed croupous pneumonia, accompanied by a pleuritic effusion large enough to require tapping. In the third week, resolution not happening, the pneumonia became purulent, and thus developed the secondary pericarditis. On autopsy the heart was found to be like the first and the effusion to be small. This patient died while sitting on the edge of his bed.

The third case was an Irishman, a very active man, yardmaster at one of the railroads here. He came to my office complaining of shortness of breath, and presented the signs, symptoms and phenomena of a mild fever. He had no pain, little headache, little backache, general malaise, anorexia; in short, all the signs and symptoms of a slight fever, a pericardiac friction murmur, and a tumbling heart, but no enlarged area of cardiac dulness. Dyspnœa was his only complaint. He had had it two months and it was growing. After two weeks he thought himself so well that we could not restrain him. He would leave his bed and go about his room. One Sunday morning he sent for a barber to shave him. He got up, sat on a chair, took the Sunday paper to look it over and fell dead. There was no post-mortem. From repeated physical examinations I believe the conditions would have been found as in the other cases. In pericarditis of gravity, which cases constitute the small minority, there is one remedy to which we at last arrive. This is digitalis. It is said that digitalis is proper to strengthen the action of the heart. My experience with these cases and others leads me to think that digitalis has very little effect in increasing the power of the heart in pericarditis.

Another point is that death from pericarditis, which is usually ascribed to the size of the effusion when it is large, may be due rather to interference with the action of the heart by adhesion. It is my opinion that the latter is frequently, and that large effusions are rarely, the cause of death. Large effusions belong rather to those inflammations of the pericardium which complicate rheumatism and nephritis, and which are not fatal. When the effusion is large, what can we expect from digitalis? The interference in this case is not with contraction, but with the filling—the diastole of the heart; and this being purely a muscular relaxation is uninfluenced by digitalis. The only effect, then, that we should expect, is that which would happen under the administration of digitalis in, for instance, the granular degeneration of typhoid fever, pneumonia, or any disease of gravity and duration; and this, it must be confessed, is little. The effect, indeed, would be less, for even if the systole should be improved by digitalis, the diastole cannot be, and consequently the intra-arterial tension is not increased. On the other hand, if the adhesions constitute the obstacle to efficient contraction, we can understand how an increase of power in systole by digitalis might fracture, tear off, or free the parietal from the visceral pericardium, and thus allow an increased quantity of blood in the arterial system. But I have not observed this to happen, and the administration of digitalis for pericarditis is pregnant with disappointment, and is in striking contrast with its effects in heart dilatation.

DOMESTIC CORRESPONDENCE.

It was Diphtheria that Killed them, in Montmorency and Otsego Counties.

To the Editor:—The outbreak of dangerous disease which has prevailed in Otsego and Montmorency counties since last spring, and which local physicians said was not diphtheria, and permitted two of the corpses to be sent to Lapeer county, where a case of diphtheria occurred in a person who viewed the remains, has been investigated by the State Board of Health, the investigation having been requested by a union meeting of the boards of health of three townships in those counties.

Prof. Vaughan, of the University, a member of the State Board of Health, went and made the investigation. He has also made bacteriological ex-

aminations of the membrane from the throats of two of the patients, and has found and propagated the microörganisms which are believed to cause diphtheria. This species of microörganism is known as Löffler's bacillus. Prof. Vaughan says: "The bacilli have been compared with the Löffler bacillus, which I had obtained in the laboratory of Dr. Koch, at Berlin, and the identity of the two cannot be questioned." He reports the disease to be unmistakably diphtheria, as proved by symptoms, physical signs, throat paralysis, etc.; and the diagnosis is sustained by the bacteriological examination. It is now hoped and expected that the local authorities will take thorough measures, and stamp out the disease.

HENRY B. BAKER, Secretary.

Office of the State Board of Health, Lansing, Mich., July 22, 1890.

Medical Education.

To the Editor:—I notice the articles in regard to medical education in THE JOURNAL. Those editorials, so far as their influence upon the action of this Board is concerned, are of no weight; the Board will not recede from its position. When the time comes the Board will increase its requirements. The rule of three courses of lectures before graduation is already assured of general observance. You have doubtless noticed, too, that by the new law of the State of New York, which goes into effect September, 1891, examinations of medical students will not be held unless candidates have first taken three annual courses of lectures. Such legislation, and support from colleges and medical men, encourages the Board to maintain a strict adherence to its requirements, as published.

Very truly yours,

JOHN H. RAUCH,
Secretary Illinois State Board of Health.

Springfield, Ill., July 2, 1890.

American vs. European Medical Education.

To the Editor:—In the admirable and timely paper read before the Section on State Medicine, under the title of "American Versus European Medical Education" (*vide* No. 3, Vol. xv, of THE JOURNAL), the author, Dr. Samuel O. L. Potter, unintentionally no doubt, does an injustice to the Medical Department of the University of Georgetown, by placing this school in class second of the four comprising his classification (p. 85, loc. cit.).

This school should stand in his first class for the following reasons:

1. It requires a preliminary examination as a condition for admission.

2. It adopted a three years' graded course in 1878, which it has never abandoned.

3. It requires attendance upon three full courses of lectures, of seven months each, in all branches, as a requirement for graduation.

4. The graded classes are required to pass a satisfactory examination before being advanced to the class above.

5. It gives full clinical instruction in the general and special branches.

All this is set forth in the annual Announcement, and strictly adhered to by the Faculty. Since the adoption of the three years' curriculum, the Faculty has had every reason to be satisfied with the progress of the school, and has never felt inclined to return to the unsatisfactory and inadequate two years' courses of study. Respectfully,

C. H. A. KLEINSCHMIDT, M.D.,
Professor of Physiology, Medical Department University of Georgetown.

Washington, D. C., July 20, 1890.

BOOK REVIEWS.

HOW TO EXAMINE FOR LIFE INSURANCE. By JOHN M. KEATING, M.D., President of the Board of Life Insurance Directors, etc. Philadelphia: P. Blakiston, Son & Co. 1890.

This is an octavo of two hundred pages, well adapted to fulfill the purpose for which it is published, namely, to give concise and reliable instruction as to the proper methods of making examinations of applicants for life insurance. Part first of this work contains a terse and practical dissertation upon physical diagnosis, upon the habits and developments of those examined, that should be made matters of special observation. In the second part we have the special instructions of some twenty or more of the leading insurance companies as they are issued to their medical examiners. Thus there is here given in concise form, the combined wisdom of those who have made this subject a specialty. The volume is well worth a careful study by those who are called upon to make examinations.

THE SURGERY OF THE KIDNEYS; being the Harveian Lectures, 1889, by KNOWSLEY THORNTON, M.C., Surgeon to the Samaritan Free Hospital, etc. London: Charles Griffin & Co., Exeter street, Strand. 1890.

This is a valuable little work of 100 pages. It is a reprint of three lectures delivered by the author in 1889 upon the important subjects of renal pathology and renal surgery. In the first lecture the difficulties are considered in early diagnosis, as to whether a case is medical or surgical. The anatomical positions and relations of the kidneys are carefully considered; malformations, displacements, congenital and acquired, are described; the etiology, pathology, symptoms and treatment of hydro-nephrosis, pyo-nephrosis,

pyelitis, pyelo-nephritis and renal abscess are concisely stated. Renal calculus is next considered, and the history of the operation for its removal, the steps of the procedure, and the treatment of the wound.

The first part of the second lecture is devoted to the pathology and treatment of cystic formations. In the second portion, directions are given for the performance of nephrotomy and nephrectomy. Then follows a statement of the conditions in which the author would restrict the use of puncture, and in which he would restrict the operation of nephrotomy.

The third lecture treats of renal tumors, their pathology and treatment; closing with a description of the steps of procedure in abdominal nephrectomy. To those who are specially interested in renal surgery this little volume will prove a valuable addition to the literature which they already have on hand.

NEGROLOGY.

Henry Holmes Longstreet, M.D.

Dr. Henry Holmes Longstreet, who died at Bordentown, N. J., July 6, in his 71st year, was a man of mark in his community and the medical history of his State. He was a director in the banking, gas, water and other companies developing the resources of Burlington County, in which he settled for medical practice directly after his graduation, from the College of Physicians and Surgeons, in 1842, and where he filled out nearly half a century of energetic usefulness.

DR. A. EUGENE FALKEN, aged 41 years, was killed by the cars in Bridgeport, Conn., July 17, 1890.

DR. EDWARD G. O'MALLEY, of Wilkesbarre, Pa., was thrown from a horse while out riding in Aspen, Col., July 19, 1890, and was instantly killed. He was at one time Coroner of Luzerne county. He was 33 years of age, and was born in New Haven, Conn., where he resided until within a few years. He graduated in 1881 from the New York University Medical College.

DR. SAMUEL B. MCCLELLAN, a former resident of Hudson, N. Y., recently died in Kenosha, Wis., at the age of 84 years.

DR. JAMES D. STRAWBRIDGE died suddenly at his home in Danville, Pa., July 19, 1890. He was born in Montour county, Pa., in 1824, and graduated from Princeton College, and in 1875 from the Jefferson Medical College of Philadelphia. He served through the late war, was captured while serving as Medical Director of the Eighteenth Army Corps, and spent three months in Libby prison. Dr. Strawbridge represented the Thirteenth Pennsylvania District in the Forty-third Congress.

DR. DANIEL WELLS, aged 75, died at his residence in Newburgh on July 11, 1890. He was educated in New York, where he was once a Police Surgeon under the municipal government.

DR. JAMES R. MATTHEWS, long a successful practicing physician at Bloomville, N. Y., died July 13, 1890, aged 45 years. He was graduated by the Albany Medical College in 1871.

MISCELLANY.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U.S. Army, from July 26, 1890, to August 1, 1890.

Capt. Curtis E. Price, Asst. Surgeon U. S. A., is granted leave of absence for ten days. With the approval of the Acting Secretary of War. Par. 3, S. O. 175, A. G. O., Washington, July 29, 1890.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending August 2, 1890.

Asst. Surgeon N. J. Blackwood, ordered to duty in the Bureau of Medicine and Surgery.

Medical Director P. S. Wales, ordered to duty in charge of the Museum of Hygiene.

Official List of Changes of Stations and Duties of Medical Officers of the U. S. Marine-Hospital Service, for the Three Weeks Ending July 26, 1890.

Surgeon P. H. Bailhache, granted leave of absence for seven days. July 26, 1890.

Surgeon W. H. H. Hutton, to proceed to Chicago, Ill., on special duty. July 24, 1890.

Surgeon John Godfrey, granted leave of absence for thirty days. July 21, 1890.

P. A. Surgeon C. T. Peckham, when relieved at Memphis, Tenn., to proceed to St. Louis, Mo., and assume command of the Service. July 9, 1890.

P. A. Surgeon S. C. Devan, granted leave of absence for twenty-five days. July 15, 1890.

P. A. Surgeon P. C. Kalloch, orders of July 5, to St. Louis, Mo., revoked. July 8, 1890.

P. A. Surgeon L. L. Williams, relieved from duty at Baltimore, Md., and to assume command of Service at Memphis, Tenn. July 8, 1890.

Asst. Surgeon T. B. Perry, to proceed to Baltimore, Md., for temporary duty. July 17, 1890.

Asst. Surgeon J. B. Stoner, granted leave of absence for thirty days. July 21, 1890.

Asst. Surgeon S. H. Hussey, to proceed to Pittsburgh, Pa., for temporary duty. July 18, 1890.

Asst. Surgeon G. B. Young, granted leave of absence for fifteen days, on account of sickness. July 12, 1890.

Asst. Surgeon W. G. Stimpson, to proceed to Buffalo, N. Y., for temporary duty. July 12, 1890.

Asst. Surgeon E. R. Houghton, to report to the Medical officer in command, New York Marine-Hospital, for temporary duty. July 14, 1890.

PROMOTION.

P. A. Surgeon G. M. Magruder, to rank as such from July 12, 1890.

APPOINTMENTS.

Asst. Surgeon E. R. Houghton, to rank as such from July 12, 1890.

Asst. Surgeon A. L. Benedict, to rank as such from July 24, 1890.